



# BCWipe Enterprise

## Administrator Guide



# Introduction

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**Wiping** is the term used to describe the process of securely erasing data, such as contents of a file or disk space. When files are properly wiped, data is erased beyond recovery.

Wiping is necessary because when you just 'delete' files from your computer, the operating system does not erase the contents of these files from the hard drive – only the 'references', or links, to these files are removed. Sensitive data that you intended to erase still remains intact on your hard drive and can easily be restored with widely available undelete, or data recovery, tools.

BCWipe Enterprise features **Enforcer** for centralized control of data wiping. IT administrators can surgically remove all traces of selected data on any drive in their network. With Enforcer, an administrator can run BCWipe as a system service in Windows to perform wiping tasks remotely without end-user intervention. Being used with the **Jetico Central Manager** utility, BCWipe Enforcer allows enterprises to remotely install BCWipe across all workstations and centrally manage data wiping policies in real time. BCWipe Enforcer is also compatible with systems management software, such as Microsoft SMS and LANDesk.

With BCWipe's **Transparent Wiping** feature, Jetico has pioneered a higher level of protecting deleted data from unauthorized recovery. When Transparent Wiping is activated, BCWipe will automatically erase all contents of any deleted file or temporary file beyond recovery. Hence, you don't need anymore to worry about securely wiping all traces of every single sensitive file you've been working on – BCWipe's Transparent Wiping will always be there to take care of it! Transparent Wiping can be enabled on client workstations remotely by Jetico Central Manager administrator.

BCWipe's **Reserved Space Manager** significantly cuts the time need to Wipe Free Space by preserving previously wiped space in a clean state. Once the Reserved Space is created, BCWipe will recognize it the next time the Wipe Free Space process is running. Since the wiped data in Reserved Space is considered occupied, it will not get used or "dirty", so that space does not need to be wiped. Less space to wipe results in less time spent on this process.

BCWipe ensures that there is always sufficient free space available for work by automatically monitoring and maintaining the threshold as set by the user.

Reserved Space feature can be enabled on client workstations remotely by Jetico Central Manager administrator.

BCWipe is a powerful, military grade data wiping tool that utilizes U.S. DoD 5220.22-M, DoE M 205.1-2 and German VSITR standards, as well as the Peter Gutmann and Bruce Schneier wiping schemes. BCWipe also allows users to create and use their own **custom wiping schemes**.

BCWipe is designed to surgically delete specific data files without harming the hard drive; to erase all contents of whole hard drives, including boot records and operating system files, see [BCWipe Total WipeOut](#).

To protect the data you keep, Jetico also offers [BestCrypt](#) software for strong encryption that's easy to use – wherever you store sensitive data. BestCrypt offers robust algorithms, supports all major operating systems and allows you to keep any form of data (files, documents, pictures, databases) in encrypted form on the hard disk, network disks, removable media CDs/DVDs and even floppies. BestCrypt provides on-the-fly data encryption for transparent encrypt/decrypt operations. Nobody can read the data unless they have the right password or keys. So if your computer were ever lost or stolen, you would be certain that your personal information is secure and cannot be obtained by someone else.

Visit us any time at [Jetico.com](http://Jetico.com)

**See also:**

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[Jetico Central Manager Introduction](#)

# Main Functions

BCWipe Main Functions and Tools

Enterprise Edition Main Functions

# BCWipe Main Functions and Tools

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The BCWipe system provides the following ways to shred contents of deleted files:

- **Delete with wiping.**

Using the **Delete with wiping** command, you can delete and wipe file or folder, as well as selected group of files/folders. As well, BCWipe wipes the file slack, file attributes and (for NTFS) alternate data stream, if it exists.

- **Wipe free space.**

When you delete sensitive files using a standard Windows 'Delete' command, the operating system does not shred contents of the documents from hard drive, it just marks disk space, earlier occupied by the files, as 'free'. To remove all the traces of the earlier deleted files completely, use this command to wipe free space on the disk, where these files were stored.

- **Wipe Internet History.**

BCWipe can completely wipe all traces of your Internet history: cache, cookies, browsing history, search history, saved passwords, last active tabs, etc. Supported web browsers include the latest versions of Internet Explorer, Mozilla Firefox, Google Chrome and Opera.

- **Wipe Local History.**

(Wipe names of recently used files) BCWipe can wipe names of files opened with Windows components and other popular applications. Names stored on a subfolder or in Windows Registry can be wiped. View detailed information about every entry, such as in the Find History list. Individual entries can be wiped without deleting the whole list.

- **Swap file protection.**

BCWipe utility can wipe unused space in the Swap File or keep the whole swap file encrypted.

- **Wipe file slacks.**

File slack is the disk space from the actual end of a file up to end of the last cluster used by the file. You can turn on/off file slack wiping before running the **Wipe Free Space** process.

- **Wipe MFT records - for NTFS drives.**

MFT - Master File Table is a reserved space on NTFS disk, where the file system stores names and attributes of files. Small files may reside inside MFT completely. After ordinary Windows 'Delete' operation, Windows marks corresponding MFT record as 'unused'. Windows does not erase the MFT entry contents (that is why Unerase utilities work!). Any file that has been 'deleted' by Windows, can get its name restored by special utilities, and if the file body has not been overwritten, contents of the file can be recovered. BCWipe can wipe empty **MFT Records** - i.e. records related to deleted files.

- **Wipe directory slacks.**

NTFS directory is a special file that contains names of files and subdirectories. Disk cluster that belongs to a directory is named **directory node**. Directory node has a slack (space from the end of directory data up to the end of cluster). On FAT/exFAT file systems, file names are stored in so called **directory entries**. Slack of the directory node or directory entry may still contain name of the deleted file, as well as other deleted data.

- **Wipe NTFS transactions log file.**

NTFS is a journaling file system and uses the NTFS Log (\$LogFile) to record temporary data for all files you were working with. Transactions log file is used to restore file system in case of a failure.

- **Transparent Wiping.**

Automatic wipe of the contents of every file or folder deleted by applications or operating system. This functionality is activated by creating the special task called **Transparent Wiping** in BCWipe Task Manager.

- **Wipe Compressed Files**

Compressed files cannot be wiped by usual means. BCWipe contains the special module that can read disk sectors on a low level. Due to this module, BCWipe can wipe compressed files. Administrator rights are required to wipe compressed files.

- **Disk-level verification.**

BCWipe contains the special module that can read disk sectors on a low level. Due to this module, BCWipe can run advanced verification of wiping process by reading results directly from physical disk sectors. Administrator rights are required to run this type of verification.

The following tools allows users to configure and control the wiping process:

- **BCWipe Task Manager.** The utility allows configuring BCWipe to run some wiping tasks automatically. You can set a time for running the task, as well as special options for the task. The utility is used by administrators to configure automatic tasks on users' computers.
- **Wiping Scheme Editor** allows creating custom wiping schemes.
- **Swap File Encryption** utility. Swap File is the Windows system file that is used for the virtual memory support, and it can store parts of documents, you are working with, in an opened form on hard drive. Even if some powerful encryption program encrypts an original document, Windows can put a whole document or part of it to the Swap file in an opened form. Encryption keys, passwords, and other sensitive information can also be swapped to hard drive. Even if you use all of the security advantages of the latest Windows versions, simple investigating of the Swap file in DOS mode may allow extracting a lot of interesting information from the file. BCWipe allows encrypting the Swap file contents and preventing such a leak in the operating system.
- **Hexadecimal File Viewer.** Using the Viewer you can examine contents of file after wiping. The utility is useful for investigating a quality of wiping process, for example when you use a custom wiping scheme.
- **Log Viewer.** A convenient tool for reading, searching and filtering information about wiping process.
- **Automatic Update utility.** Allows users to get the latest updates of the software automatically.

**See also:**

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[Delete with wiping](#)  
[Wipe Free Space](#)  
[BCWipe Task Manager](#)  
[Transparent Wiping overview](#)  
[Swap File Encryption](#)  
[Log File Viewer](#)

# Enterprise Edition Main Functions and Tools

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BCWipe v6 Enterprise is supported by [Jetico Central Manager](#)

It includes the following features:

- **Remote automatic deployment** in enterprise network on a group of computers.
- **Remote wiping tasks assigning.** Configure BCWipe on client computers from a JCM console to run wiping tasks according to a schedule
- **Enforce running wiping tasks** on client computers
- **Block running wiping tasks for local users**
- **Centralized automatic updates** of client software
- **Centralized logging.** Client computers send reports to the central database. As a result, centralized monitoring of Jetico client software on every computer.
- **Creating global reports.** Create reports with information about current security status of client computers in the network.
- Enhanced security due to **encrypted client-server communication.**

# BCWipe Enterprise Prerequisites

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BCWipe Enterprise is deployed on users' workstations by means of Jetico Central Manager or using a system management tool like SMS or Landesk. User workstations require the following minimum computer configuration:

## **Hardware**

- PC with 486 or higher processor
- Minimum 20MB of free HDD space to install and run the BCWIpe software.

## **Software**

- Windows 10
- Windows 8/8.1
- Windows 7
- Windows Vista
- Windows 2008 Server
- Windows XP
- Windows 2003 Server

including 32-bit and 64-bit versions.

# New Features in BCWipe v6 Enterprise

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BCWipe v6 Enterprise includes the following features:

- **Reserved space** for large disks. Wipe Free Space is time-consuming process. On modern large disks with terabytes of free space it may take several days to complete. Reserved Space functionality of BCWipe is intended to save the time by preserving the wiped space in clean state.

- Wipe **directory slacks** on NTFS drives.

NTFS directory is a special file that contains names of files and subdirectories. Disk cluster that belongs to a directory is named **directory node**. Directory node has a slack (space from the end of directory data up to the end of cluster). Slack of the directory node may still contain name of the deleted file, as well as other deleted data. BCWipe can now wipe slack space in directories.

- Wipe temporary data stored in **NTFS transaction log file**.

NTFS is a journaling file system, it uses the NTFS Log (\$LogFile) to record file system usage history. BCWipe v6 optionally takes care about these data.

- **Wiping free space - without 'low disk space' condition.**

Previous versions of BCWipe allocated all available disk space for a short time and Windows displayed the 'Low disk space' warning message. Using the smart technology, BCWipe can now overwrite free space without getting into 'Low disk space' condition.

- **MFT wiping - faster and more skilful than ever.**

When wiping free space and unused MFT records, BCWipe v6 wipes MFT several times faster than the previous version.

When wiping a file, BCWipe v6 wipes corresponding MFT record.

- **New wiping standards** added: Russian GOST R 50739-95

- British HMG IS5 (Baseline, Enhanced)
- NAVSO-P5239-26
- Canadian RCMP TSSIT OPS-II
- US Army AR380-19

- Since version 6.02 BCWipe supports **Windows 8** operating system. BCWipe works with **Storage Spaces** (a new capability that can combine multiple hard drives into a single virtual drive) just as it would for a simple disk partition. Users won't need to waste time to wipe the huge amount of virtual disk space. BCWipe is smart enough to distinguish free allocated space and free not-allocated space that was never used and does not require wiping.

**See also:**

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[Reserved Space](#)

[Central Management of BCWipe](#)

[Creating and editing BCWipe Task Sets](#)

[BCWipe Enterprise Task Manager. Task Sets.](#)

[Schedule for running BCWipe Tasks.](#)

[Logging functionality of BCWipe Enterprise.](#)



# How to Install BCWipe Enterprise

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BCWipe Enterprise is installed by **Jetico Central Manager** administrator.

Please see JCM Admin Guide for more details: [Deployment of Client Software Remotely](#)

# Wiping Tasks

**BCWipe Enterprise Task Manager. Task Sets.**

**Delete With Wiping task**

**Wipe Free Space task**

**Reserved Space**

**Wipe Internet History task**

**Wipe Local History task**

**Swap File Encryption task**

**Transparent Wiping task**

# BCWipe Enterprise Task Manager. Task Sets.

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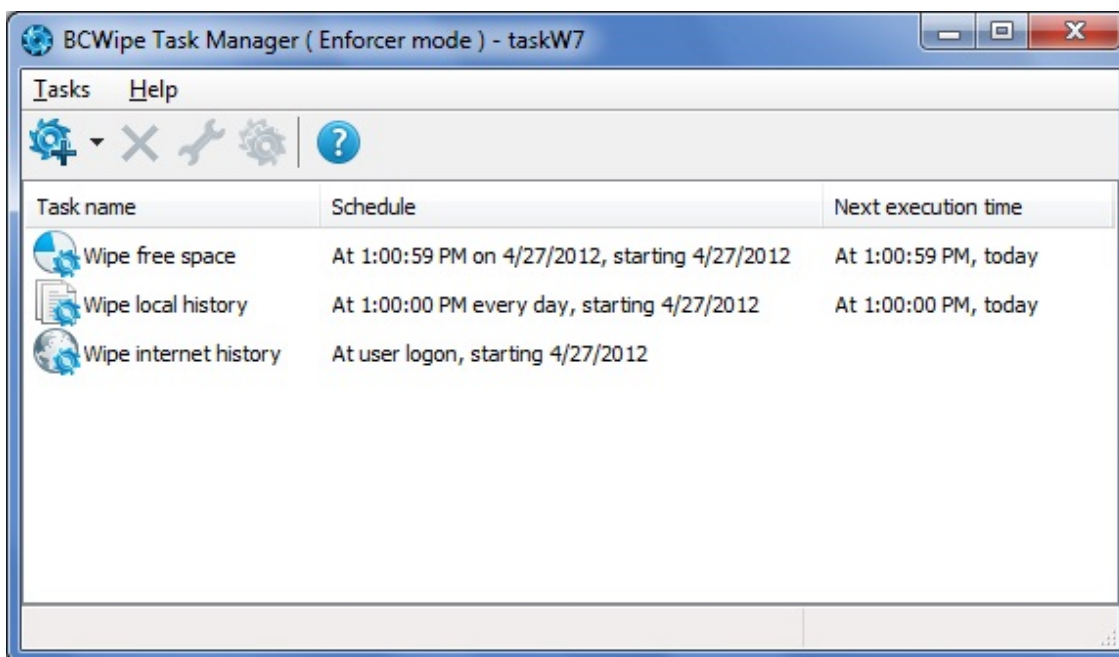
BCWipe Enterprise software includes **Jetico Central Manager** and **BCWipe client software**. Jetico Central Manager utility allows administrator to manage BCWipe software on client computers from a central management console. The idea of management is in the following.

1. In the Jetico Central Manager Console the administrator creates a number of **Task Sets** using **BCWipe Task Manager** utility.
2. Task Set includes one or more wiping tasks.
3. The administrator defines schedule for every wiping task in the Task Set.
4. In the Console the administrator assigns configured Task Set on selected computer or group of computers in a company network. If in future the administrator may change the Task Set, and the client computer or group of computers will get BCWipe configuration updated.
5. The administrator can create as many Task Sets as needed for the company network. As a result different groups of computers may get different BCWipe Task Sets for their local configurations.

BCWipe Task Manager allows creating six types of wiping tasks:

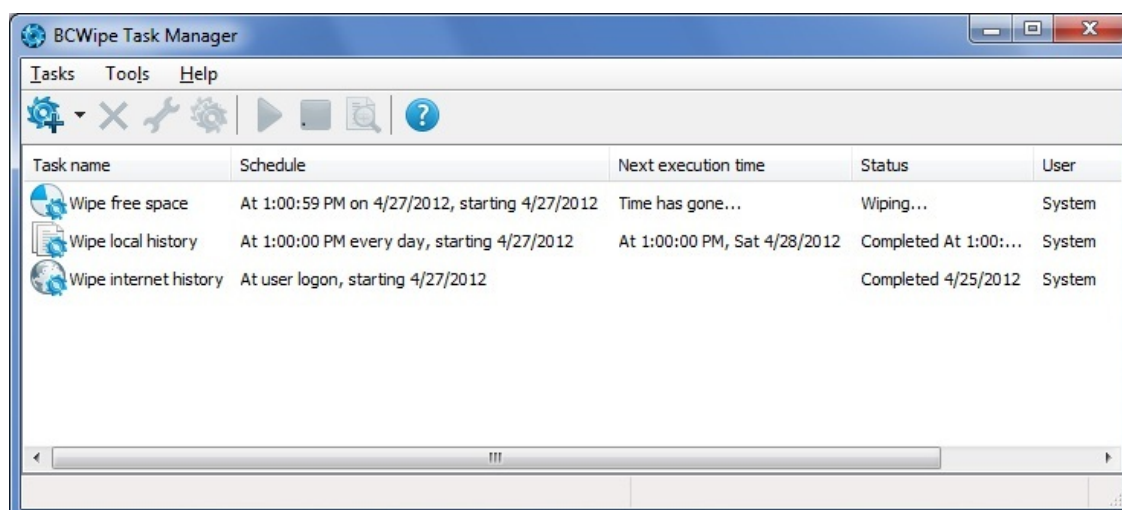
- **Delete with wiping.** Create task of this type to make BCWipe wipe some selected files or folders automatically according to a schedule.
- **Wipe free space.** Using this type of task you can configure BCWipe to wipe free space on some hard drive partition or on a set of partitions.
- **Wipe Internet History.** This task can wipe all traces stored on your computer after accessing the Internet using some of the browsers - Internet Explorer, Mozilla, Opera, Google Chrome.
- **Wipe Local History.** You can configure BCWipe Task Manager to clear traces of your activity that are stored on the computer and not related to Internet. For example, temporary folder that Windows created and used for your user account and Recycle Bin folders.  
Besides, this task is used to wipe names of recently opened files. The function may be useful because of security reasons. For example, you can configure BCWipe to clear the list of recently opened **MS Word** documents, so if someone occasionally runs MS Word program, he/she will not be able to determine what documents you worked on.
- **Transparent wiping.** This is a specific task. It can be active or suspended, but it cannot be scheduled for a predefined time.
- **Swap File Encryption** This is another specific task. It can be active, but it cannot be scheduled for a predefined time.

Main window of BCWipe Task Manager on central management console looks like the following picture:



The picture above shows a Task Set named **TaskW7**. The first task **Wipe free space** will be run once on client computers at the predefined time. The second task **Wipe local history** is scheduled to be run daily. The third task **Wipe Internet histroy** is assigned to be performed at user logon.

Let's assume that this Task Set was assigned to a client computer and all the tasks were completed after some time. This picture illustrates how the BCWipe Task Manager will look on the client computer:



BCWipe Task Manager on administrative console differs from BCWipe Task Manager on client computers:

- BCWipe Task Manager on administrative console reports the name of the task set.
- BCWipe Task Manager on administrative console does not have the toolbar buttons like **Start the task now, Stop, View log file**.
- BCWipe Task Manager on administrative console takes into account that the task will be running on other computer, not on the one where the task is being created.
- BCWipe Task Manager on client workstation displays tasks, assigned by **Jetico Central Manager** administrator, tasks created by the current user and tasks created by other users on this workstation. The information about task owner (creator) is reported in the special column named **User**. For tasks created by JCM administrator the column reports **System**.

- BCWipe Task Manager on client workstation includes the column named **Status**. When a task is running - this column will report it. For **Wipe free space** task it will report the current step of the process. For other tasks - status 'wiping...' is reported. After the task is completed, this column will report the final status of the task. The picture above shows that two of three tasks assigned by administrator were successfully completed at the reported time, while the third task is being performed.

#### See also:

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[Delete with wiping](#)

[Wipe free space](#)

[Wipe Internet History](#)

[Wipe Local History](#)

[Swap file encryption](#)

[Transparent wiping](#)

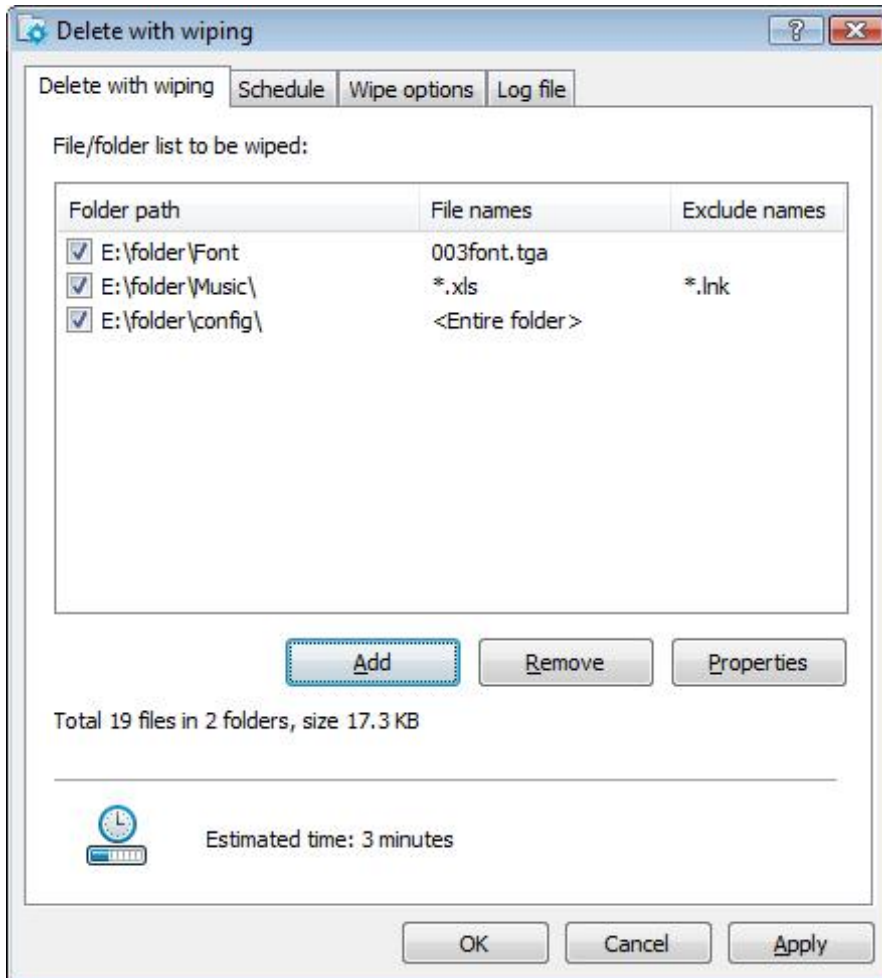
[Central Management of BCWipe](#)

[Creating and editing BCWipe Task Sets](#)

[Assigning BCWipe Task Sets to Client Computers](#)

# Delete With Wiping task

**BCWipe Task Manager** can be used to set automatic wiping of selected files or folders by creating new task of the **Delete With Wiping** type. To create a new task run the **Create new task** command from the **Tasks** menu in the BCWipe Task Manager program. The following picture illustrates dialog window, appeared when you run the command and select the **Delete With Wiping** type of task.



To add file or folder to the list of files that must be wiped automatically, click **Add**. Then you will be asked to choose one of the commands: **Add existing file**, **Add existing folder** or **Add path**. Use the latter command to add a file or folder that does not exist on the console computer but exists on workstations and must be wiped.

To remove file or folder from the list, select the item and click [**Remove**] .

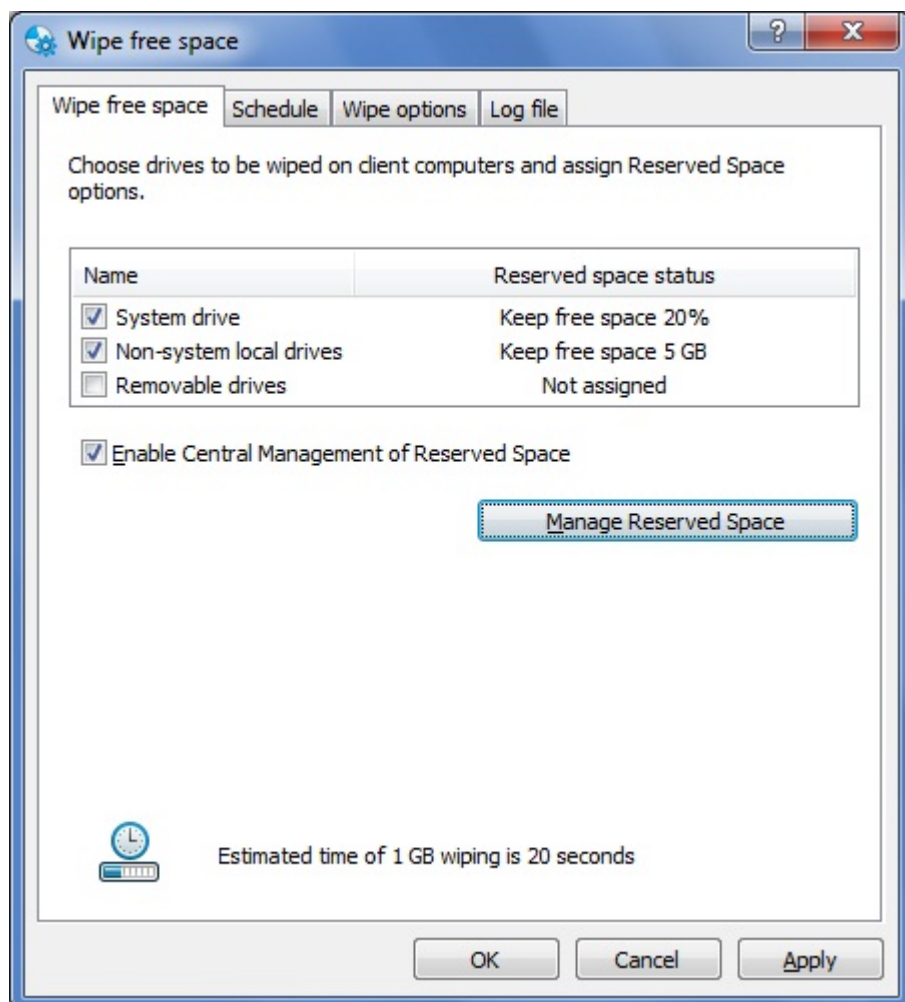
To edit the selected item, click [**Properties**] .

## See also:

[Schedule for running BCWipe Tasks](#)  
[Logging functionality of BCWipe Enterprise](#)  
[Wiping Scheme Editor](#)

# Wipe Free Space task

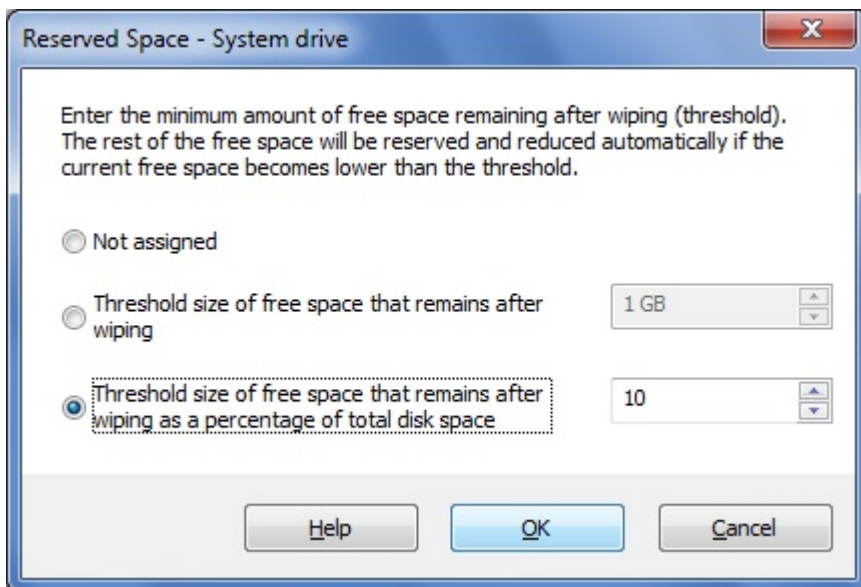
**BCWipe Task Manager** can be used to set wipe free space to run automatically on disk drives. To create the new task select the **Create new task** command from the **Tasks** menu in the BCWipe Task Manager program. The following picture displays the dialog window that appears when you run the **Create new task** command and select the **Wipe Free Space** type of task.



Mark the checkbox corresponding to the type of drives that are to be wiped automatically on client workstations.

If you want to enable [Reserved Space](#) functionality - mark the checkbox **Enable Central Management of Reserved Space** and the [Manage Reserved Space] button will become available.

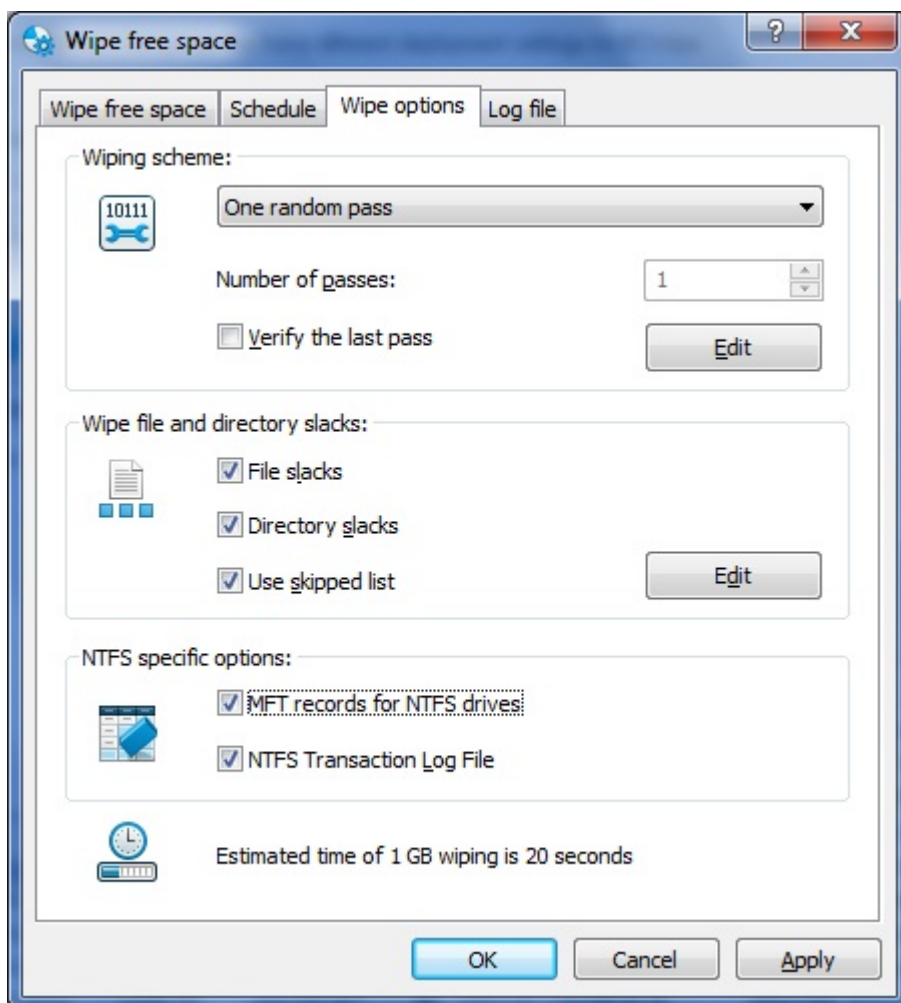
Select types of disks (system, non system, removable) in the top window and click the [Manage Reserved Space button]. The following window will appear:



Central Management of Reserved Space allows the administrator to assign a **threshold** - the portion of free space that will remain available for system use after wiping. The other portion of free space will be preserved in a clean state that is no longer available for system use. The available free space will never be lower than the assigned threshold, while the reserved portion exists. The size of free/reserved space is maintained automatically by BCWipe.

The administrator can assign the free space as an absolute value (for example, 1 GB) or as a percentage of total disk space.

If you open the **Wipe Options** property tab, the following window appears:

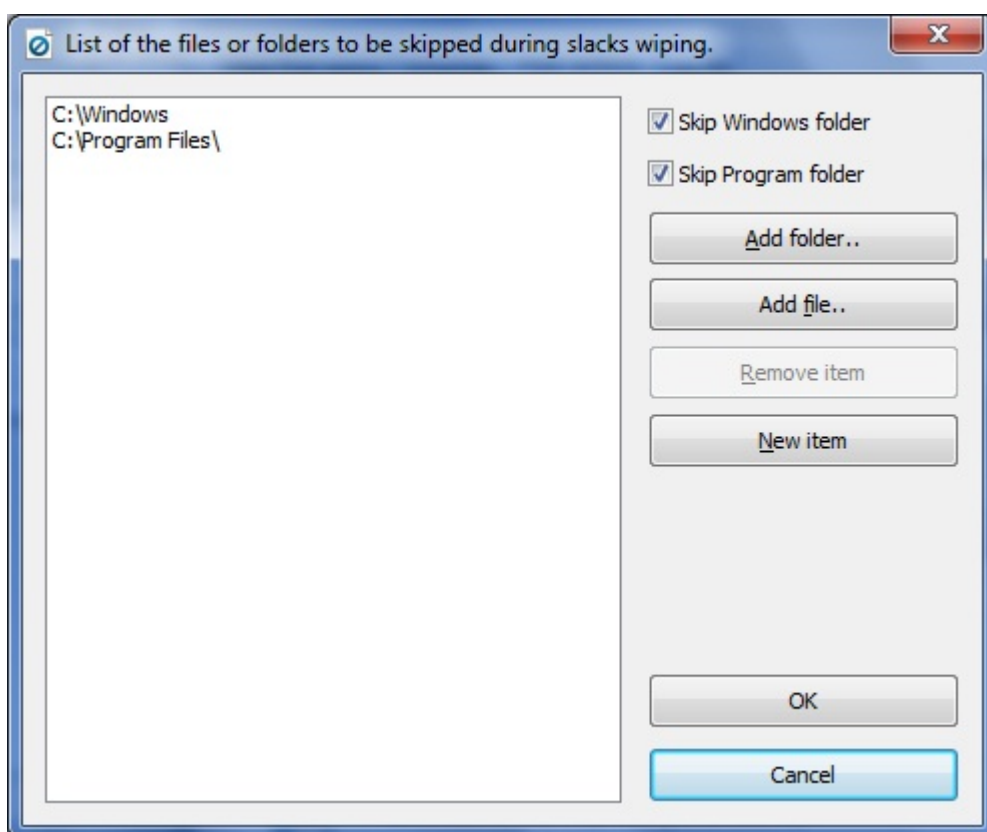




**Wiping Scheme** - BCWipe allows users to wipe data with predefined wiping schemes. The software also includes **Wiping Scheme Editor** utility to view and edit number of wiping passes and binary patterns used in every pass. You can customize all the details concerning the wiping process if you click **[Edit]**. Read more about creating your own wiping scheme in the [Wiping Scheme Editor](#) chapter.

**Wipe file slacks.** - File slack is the disk space from the actual end of a file up to end of the last cluster used by the file. The space may contain data from files written there earlier. Set the option if you want to wipe slacks of existing files on the disk.

**Use skipped list** - Wipe of file slacks is time consuming process. If we take into account that many files and folders are stored on disk for a long period, we can wipe file slacks of them once only, and then configure BCWipe so that the program will skip slacks of the files inside the folders. To create list of files and folders that must be skipped when the program wipes file slacks, click **[Edit]** and the following window will appear:



It is recommended to add standard Windows folders in the list of files to be skipped when BCWipe wipes file slacks by setting the **Skip Windows folder** and **Skip Program folder** checkbox. Other files and folders can be added in the list by clicking **[Add folder]** or **[Add file]**. Use **[New item]** to add a file/folder that does not exist on the console computer.

**Wipe directory entries for FAT, MFT records for NTFS** - **MFT** is a reserved space on a disk, where the file system stores name and attributes of the file. During ordinary Windows delete operations, Windows just marks a corresponding directory entry as unused, but does not erase the whole directory entry. Any file that has been 'deleted' by Windows, can get its name restored by special utilities. You can set the option to erase all data from directory entries. Note that analog of MFT is called Directory Entries in FAT file system.

#### See also:

[Reserved Space](#)  
[Schedule for running BCWipe Tasks](#)  
[Logging functionality of BCWipe Enterprise](#)  
[Wiping Scheme Editor](#)

# Reserved Space

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## What is it for?

**Wipe Free Space** is time-consuming process. On modern large disks with terabytes of free space it may take several days to complete. **Reserved Space** functionality of BCWipe is intended to save the time by preserving the wiped space in clean state. As soon as *Reserved Space* is created, next time when *Wipe Free Space* process is running, BCWipe will recognize the clean space and won't wipe it.

## How it works?

**Wipe Free Space** process allocates free disk space temporarily and overwrites it according to the wiping scheme. Then the process deletes the temporary files; as a result, the disk has the same amount of free space as before. When **Reserved Space** feature is enabled, BCWipe does not delete some temporary files. The wiped space is still considered as "occupied" and it won't be used, so it won't become "dirty" and it won't need wiping.

The size of free and reserved space is maintained by BCWipe automatically. The user just assigns a **threshold** - the size of free space that remains after wiping. BCWipe will ensure that the drive never has lower free space than the 'threshold'.

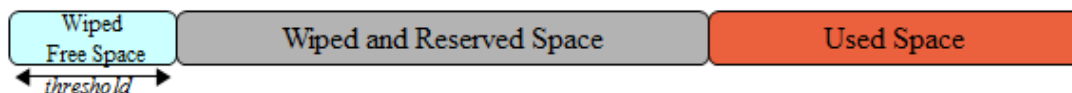
## What happens just after wiping free space?

If the reserved space is assigned, every time 'Wipe Free Space' is started and the process is successfully completed, BCWipe sets the amount of free space to be equal to the assigned **threshold**. The rest of newly wiped space is added to the reserved space.

*Before wiping:*



*After wiping:*

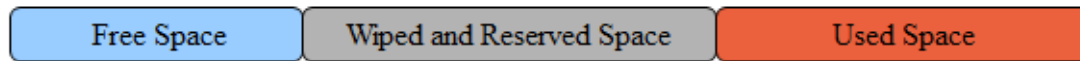


## Wear leveling

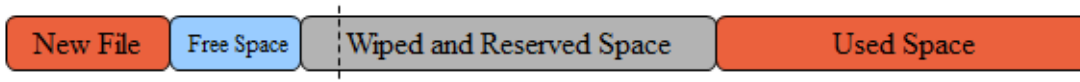
After second and subsequent wiping, when new portion of wiped space has been added to the reserved space, an old portion of the reserved space might be freed. This is done to make all parts of disk work, to avoid using and reserving the same disk sectors for a long time.

## What happens if the system or an application allocates disk space.

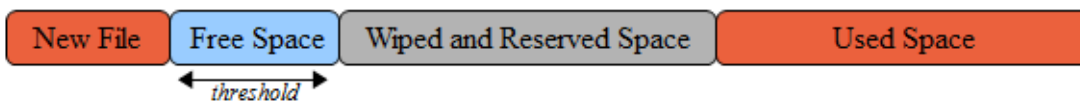
BCWipe continuously monitors the amount of free space on the disk where **Reserved Space** feature is enabled. If the system or an application creates new file so that the actual free space becomes lower than the **threshold**, BCWipe automatically increases size of free space up to the **threshold** by reducing the reserved portion. If the reserved portion on the disk becomes empty, then BCWipe stops monitoring free space on the disk.



*Create new file:*



*BCWipe increases Free Space up to threshold:*

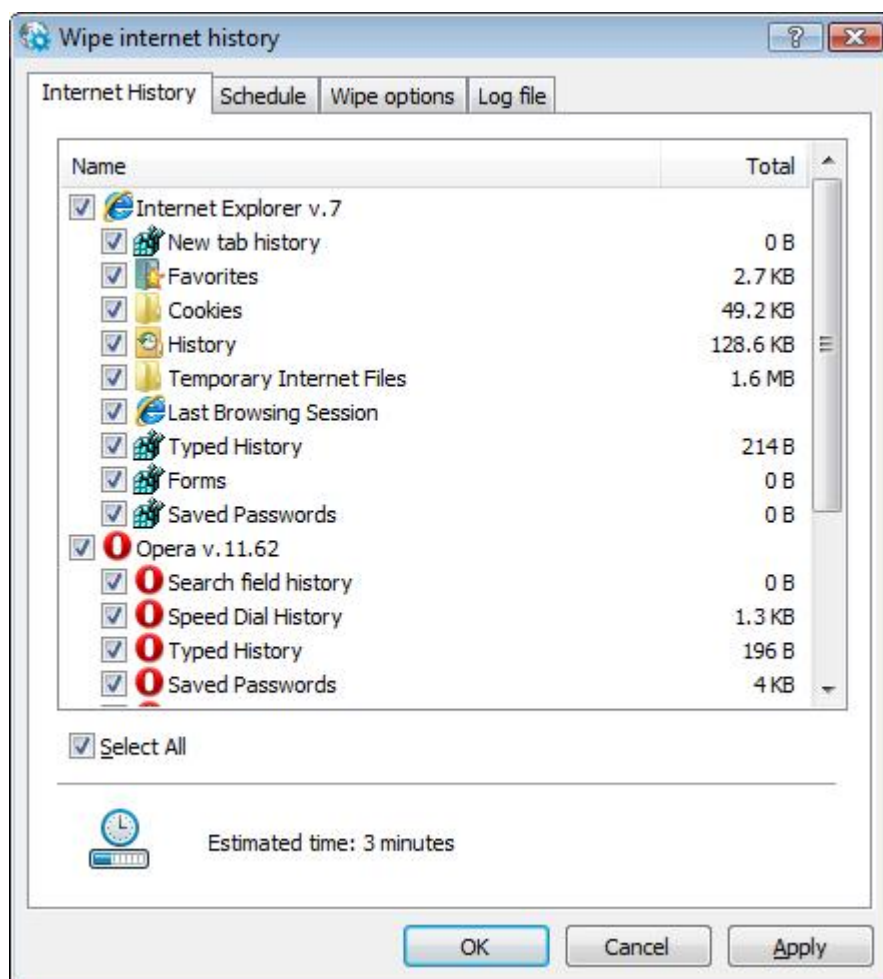


**See also:**

[Wipe free space task](#)

# Wipe Internet History task

**BCWipe Task Manager** can be used to set automatic wipe of all traces stored on your computer after browsing the Internet. The traces are: Internet Cache (Temporary Internet Files), Cookies, History, saved passwords, last active tabs, typed addresses, etc. To wipe all the items - create new task by **Create new task** command from the **Tasks** menu in the BCWipe Task Manager program. The following picture illustrates dialog window, appeared when you run the command and select the **Wipe Internet History** type of task.



Mark the checkbox, corresponding to the item that you wish to be wiped.  
BCWipe v6 supports Internet browsers: Internet Explorer, Mozilla Firefox, Opera, Google Chrome.

**NOTE1:** For Internet Explorer - some special files like "index.dat" may be locked by system and cannot be wiped during Windows session. In that case BCWipe will rename those files to its own temporary directory and will wipe them at system startup.

**NOTE2:** Some items are stored in Windows Registry and are not available when user is not active (not logged on). If the task is running at the time when user is not active, those registry items will be wiped just after user's login.

**NOTE3:** This task is user-specific, because Internet files are stored inside user profile. BCWipe will wipe History for all active users and for each user who logged off at least once after task assigning.

## See also:

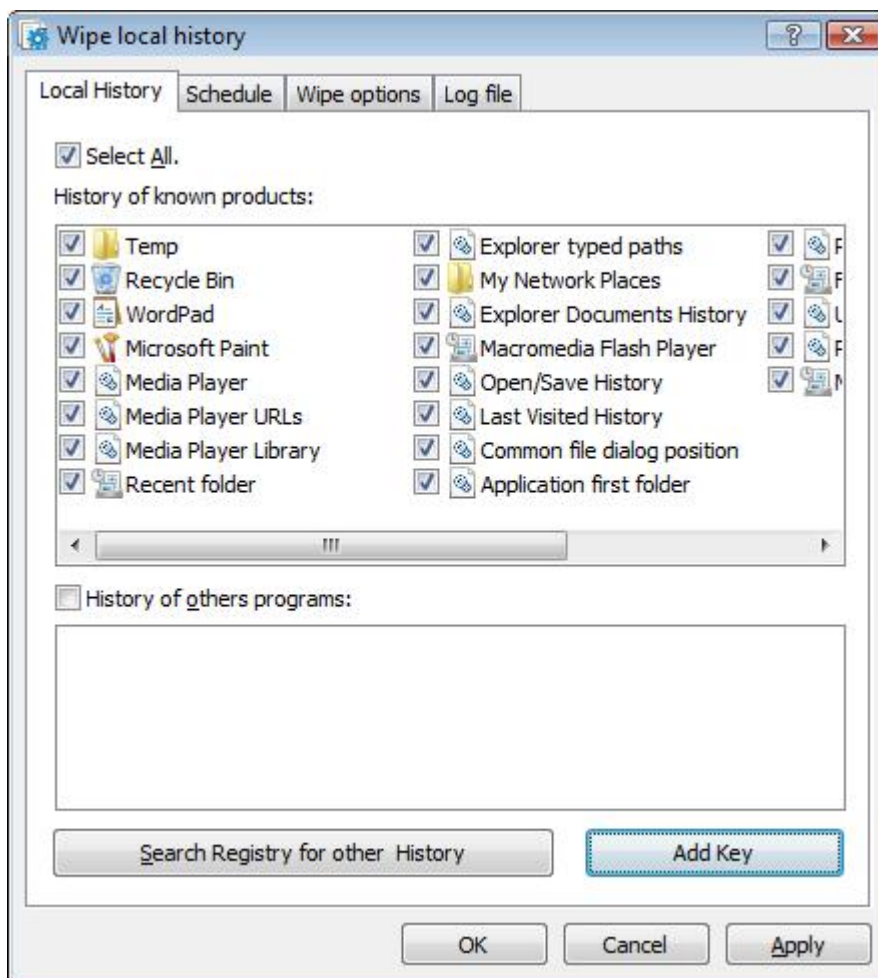
[Schedule for running BCWipe Tasks](#)  
[Logging functionality of BCWipe Enterprise](#)

# Wipe Local History task

You can configure **BCWipe Task Manager** to clear names of recently used files. Such lists are also called as Most Recently Used lists, or MRU lists. The function may be useful because of security reasons. For example, BCWipe can clear a list of recently opened MS Word documents, so if someone occasionally runs MS Word program, he/she will not be able to determine what documents you were working on.

List of Local History items in BCWipe Task Manager includes also Windows Temp and Recycle Bin folders.

**BCWipe Task Manager** can be used to set automatic wipe of the Local History by creating new task of the **Wipe Local History** type. To create the new task run the **Create new task** command from the **Tasks** menu in the BCWipe Task Manager program. The following picture illustrates dialog window, appeared when you run the command and select the **Wipe Local History** type of task.



In the dialog window, top pane shows **History of known products**. Mark a checkbox, corresponding to some type of MRU lists to make BCWipe wipe it automatically.

BCWipe allows to wipe any key in CURRENT\_USER section of Windows Registry.

Click [**Add key**], run Windows Registry Editor by clicking Regedit, copy any key from CURRENT\_USER section and paste it into BCWipe box. The key will be included in the History of other programs list.

**NOTE1:** When you Wipe local history (or MRU lists), you instruct BCWipe to wipe references to the files, but not the files themselves! The exclusion is Windows Temp and Recycle Bin items.

**NOTE2:** Some items are stored in Windows Registry and are not available when user is not active (not logged on). If the task is running at the time when user is not active, those registry items will be wiped just after user's logon.

**NOTE3:** This task is user-specific, the items are stored inside user profile, or in Windows Registry. BCWipe will wipe History for all active users and for each user who logged off at least once after task assigning.

**See also:**

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[Schedule for running BCWipe Tasks](#)  
[Logging functionality of BCWipe Enterprise](#)  
[Wiping Scheme Editor](#)

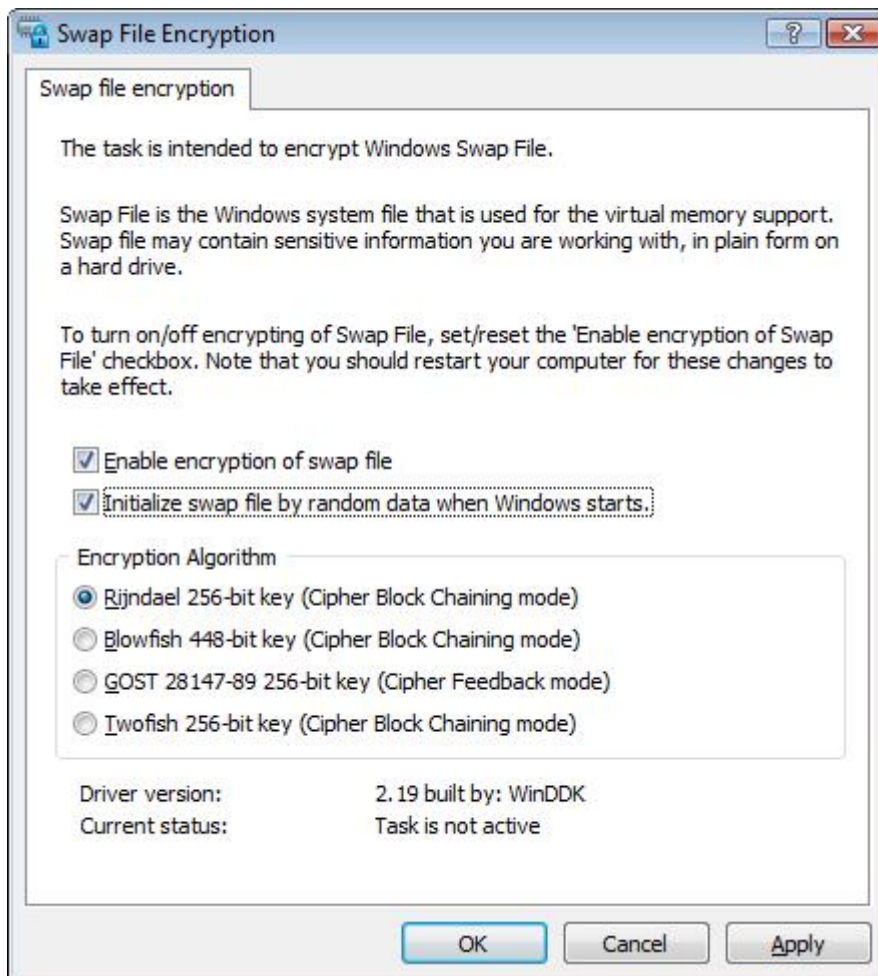
# Swap File Encryption task

BCWipe Enterprise allows remote activation of encrypting **Windows Swap File** on client computers. Swap File is the Windows system file that is used for the virtual memory support, and it can store parts of documents, you are working with, in an opened form on hard drive. Even if some powerful encryption program encrypts an original document, Windows can put a whole document or part of it to the Swap file in an opened form. Encryption keys, passwords, and other sensitive information can also be swapped to hard drive. Even if you use all of the security advantages of the latest Windows versions, simple investigating of the Swap file in DOS mode may allow extracting a lot of information from the file.

## How to activate Swap File Encryption remotely from Jetico Central Manager Console.

Encryption of the swap file is activated by creating **Swap File Encryption** task. To create the new task run the **Create new task** command from the **Tasks** menu in the **BCWipe Task Manager** program.

The following picture illustrates dialog window, appeared when you run the command and select the **Swap File Encryption** type of task.



To turn on/off encryption of the swap file, set/reset the **Enable encryption of swap file** checkbox. Note that BCWipe will start (or stop) encrypting the Swap file only after reboot. **Swap File Encryption** utility (called also **CryptoSwap**) allows choosing one of the following encryption algorithms - Rijndael, Blowfish, GOST 28147-89 or Twofish.



Encryption key is generated from random statistics, like nanoseconds timing intervals, when Windows boots up, and new key is generated every time when computer is rebooted. **CryptoSwap** utility does not store the key somewhere on disk, it “forgets” the key after rebooting the computer.

**NOTE: CryptoSwap** will start (or stop) encrypting the Swap file only after reboot of the workstation.

## How Swap File Encryption utility works

**Swap File Encryption utility (CryptoSwap)** loads low-level driver when Windows is started and before the operating system runs its virtual memory support mechanism and initializes the Swap File.

At the time of initialization the driver generates random encryption key, which is unique for the current Windows session. Encryption key is generated from random statistics, like nanoseconds timing intervals, and new key is generated every time you reboot computer. The **CryptoSwap** utility does not store the key somewhere on disk, it “forgets” the key when you reboot or shutdown computer.

The **CryptoSwap** driver intercepts all filesystem operations, like open/close, read/write file and others, detects requests to the system Swap File and encrypts data buffers when Windows writes something to Swap File. Similarly, when Windows reads data from Swap File, **CryptoSwap** decrypts the data. Hence, activity of the **CryptoSwap** utility is transparent for the operating system and for running applications.

## About initialization of the swap file.

When you reserve, for example, 5 Mbytes for an usual new file, the operating system clears the reserved 5 Mbytes of disk space with zeros. It is not so for the Swap File. When Windows boots up, it reserves disk space for the Swap File without re-writing the reserved disk space.

As a result, the following effect may occur. **CryptoSwap** starts to encrypt all the read/write operations to the Swap File, but activity on computer is not too high, and there is no need to use the Swap File. Hence, encrypted information won't be written to the disk space, reserved for the Swap File.

Now we boot to DOS and notice that only a small part of the Swap File (pagefile.sys) has been encrypted, all the other space in the file is just garbage, stored earlier on the disk. Since the ‘garbage’ can also contain some sensitive information, it is recommended to check ***Initialize swap file by random data when Windows starts*** checkbox.

### **See also:**

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[Central Management of BCWipe](#)  
[Creating and editing BCWipe Task Sets](#)

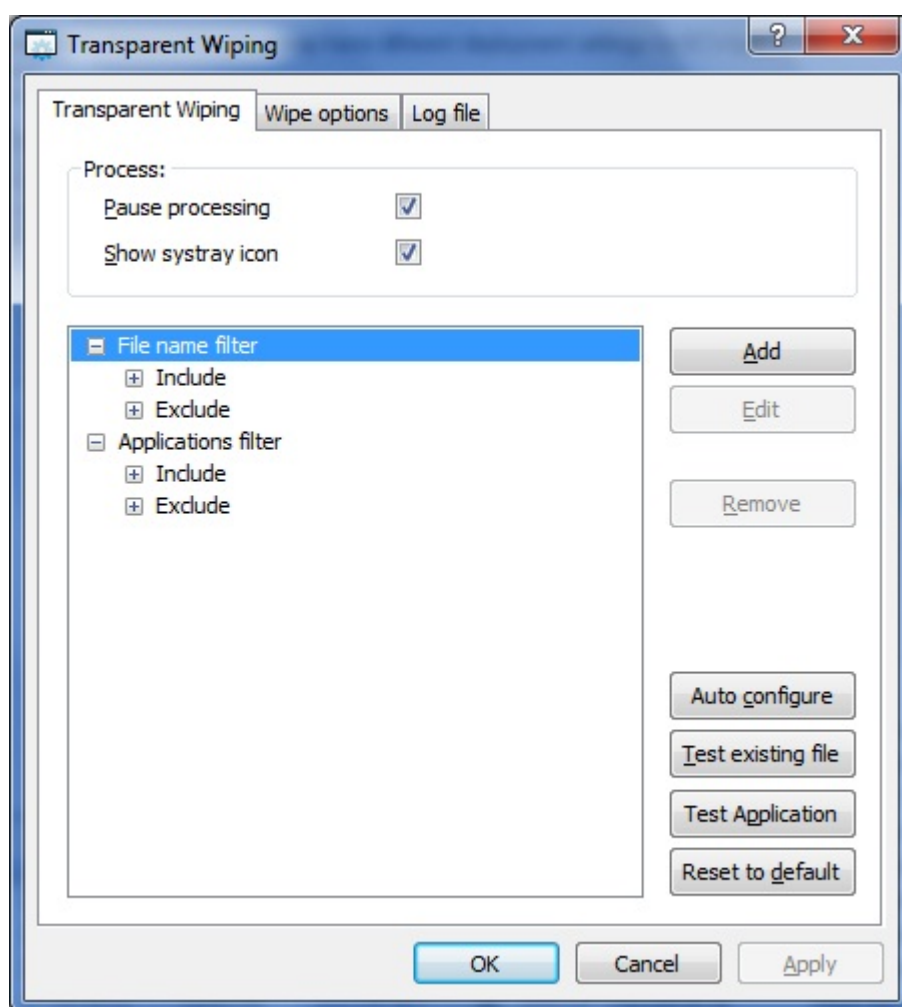


# Transparent Wiping task

BCWipe Enterprise allows remote activation of **Transparent Wiping** on client computers. When Transparent Wiping is activated, BCWipe will automatically wipe all contents of any file or folder that is deleted by system or by an application.

**BCWipe Task Manager** is used to activate Transparent Wiping by creating and assigning the **Transparent Wiping** task. To create the new task run the **Create new task** command from the **Tasks** menu in the BCWipe Task Manager program.

The following picture illustrates dialog window, appeared when you run the command and select the **Transparent Wiping** type of task.



To **pause** Transparent Wiping activity on client computers - mark the checkbox **Pause processing**. If system performs huge file operations, that do not concern sensitive files (like Windows Update or antivirus scan) - you may pause Transparent Wiping to speed up the process. All the files in the TW buffer will be promptly deleted without wiping. Then you can resume TW again.

To **hide** Transparent Wiping icon in system tray area - unmark the checkbox **Show systray icon**. See [Transparent Wiping icon in the system tray](#) for more details

The bottom part of the page is intended for configuration of **Include and Exclude lists**. See [Include and Exclude lists](#) for more details.

**Wiping scheme** for Transparent wiping process can be set on **Wipe options** property page. It is recommended to use **one random pass** scheme for this type of tasks.

**See also:**

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[Transparent Wiping overview](#)  
[Transparent Wiping logging](#)  
[Transparent Wiping icon in the system tray](#)  
[Include and Exclude lists](#)

# Central Management of BCWipe

Central Management of BCWipe

Creating and Editing BCWipe Task Sets

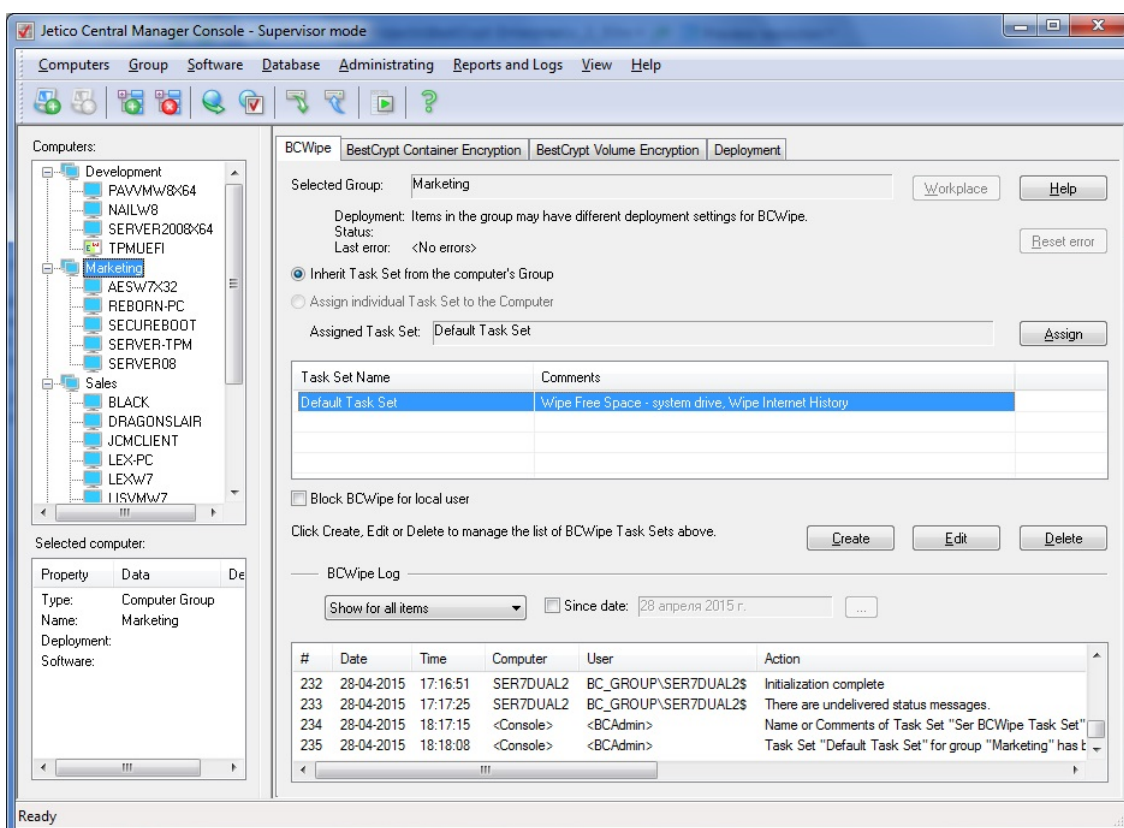
Assigning BCWipe Task Sets to Client Computers

# Central Management of BCWipe

Jetico Central Manager Administrator can do the following to manage BCWipe on the workstations where BCWipe has been deployed:

- Create BCWipe **Task Sets**. Every *Task Set* is a unite of configuration information destined to be sent to remote computer where BCWipe client software is deployed. BCWipe offers the following wiping tasks: *Wipe Free Space*, *Wipe Local History*, *Wipe Internet History*, *Delete With Wiping*, *Encrypt Swap File* and *Transparent Wiping*.
- Assign selected BCWipe Task Set to some remote computer or group of computers in a company network to configure BCWipe client software on the computers. Since the administrator can create a number of BCWipe Task Sets, different group of computers can be configured with different Task Sets.
- Modify existing BCWipe Task Set. As soon as some Task Set is modified, group of remote computers where BCWipe uses the Task Set for configuration receives the modified Task Set. As a result, administrator does not need to modify BCWipe settings on every computer, it is enough just to modify a single Task Set assigned to a computer or group of computers.
- View log information concerning central management of BCWipe. It includes information about creating and modifying Task Sets, information from remote computers about changing configuration of BCWipe client software and about problems with BCWipe remote configuration.

Administrator controls BCWipe in an enterprise network with the **Jetico Central Manager Console**. To start managing BCWipe on remote computers, select computer or computers' group in the left pane of Console and *BCWipe tab* in the right pane. The following picture illustrates Jetico Central Manager Console when BCWipe tab is selected:



There are a number of controls (radio buttons, lists and buttons) in the BCWipe tab.

- **Selected Computer/Group** text box shows name of computer or computers' group selected in the left pane of Jetico Central Manager Console. All the changes in

BCWipe configuration administrator makes in the right pane will happen for the selected computer or group.

- **Status area** - contains deployment status of BCWipe on the selected computer/group, last operation performed on the selected computer and the last error occurred on the computer.
- **[Workplace]** - Click it to get information about all users who run BCWipe program on the selected computer.
- **[Reset error]** - Click it to reset the information reported in the **Last error** field.

Administrator can assign BCWipe Task Set to an individual computer or to a group of computers.

To assign selected Task Set to a group of computers:

1. Select the group of computers in the left pane of Jetico Central Manager Console.
2. Set **Inherit Task Set from the computers' Group** radio button.
3. Select Task Set you want to use for the group of computers from the list of Task Sets.
4. Click **[Assign]**

To assign selected Task Set to an individual computer:

1. Select the computer in the left pane of Jetico Central Manager Console.
2. Set **Assign individual Task Set to the Computer** radio button.
3. Select Task Set you want to use for the computer from the list of Task Sets.
4. Click **[Assign]**

After assigning or changing Task Set for a computer or a group, the name of the Task Set will appear in the **Active Task Set** text box in BCWipe tab. Information about changes will appear in the **BCWipe Log** window.

- Click **[Create]** to create new BCWipe Task Set. Article [Creating and editing BCWipe Task Sets](#) describes in detail how to create new Task Set.
- Click **[Edit]** to change some properties of the selected Task Set. Article [Creating and editing BCWipe Task Sets](#) describes in detail how to edit existing Task Set.
- Set **Block BCWipe for local user** checkbox to prevent the user on the local computer from running BCWipe commands. Note that you can set the option for individual computer if Assign individual Task Set to the Computer option is set. If the option not set, the computer will inherit setting Block BCWipe for local user from the computer group that is a parent for the computer.

BCWipe log area can show information concerning the selected computer only or all computers in database. Each string contains information about date, time, client computer name, user name, action performed, result and error code. Administrator can configure the log window so that it displays only selected columns.

#### See also:

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[Creating and editing BCWipe Task Sets](#)  
[Assigning BCWipe Task Sets to Client Computers](#)

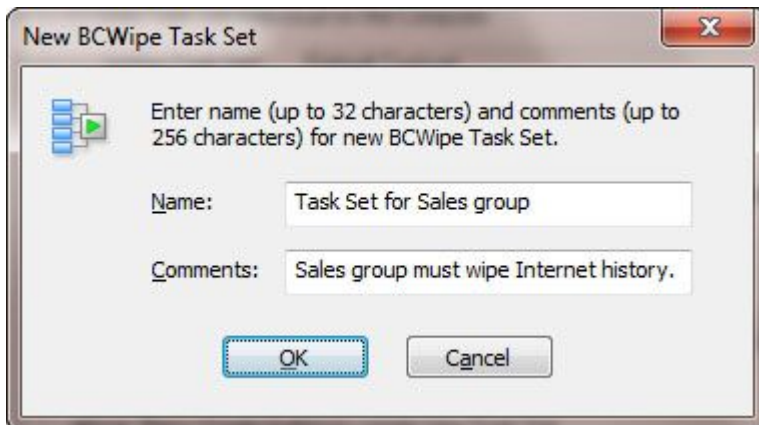
# Creating and Editing BCWipe Task Sets

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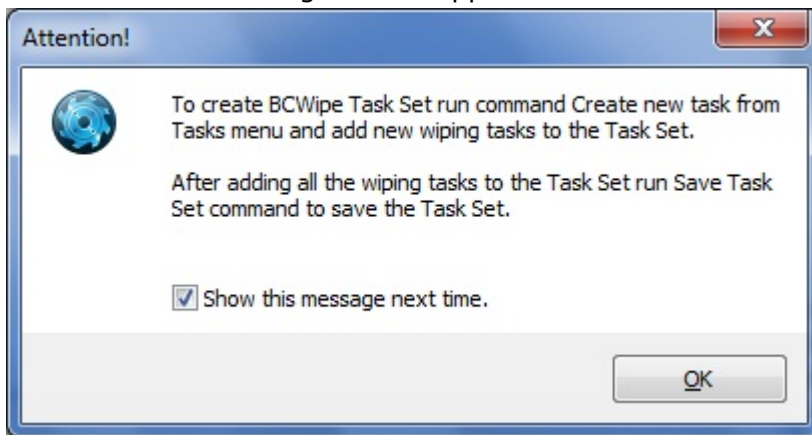
To manage BCWipe software on remote computers in a company network administrator of Jetico Central Manager should create one or more **BCWipe Task Sets**. *BCWipe Task Set* is a unite of configuration information destined to be sent to remote computer where BCWipe client software is deployed.

## Creating BCWipe Task Set

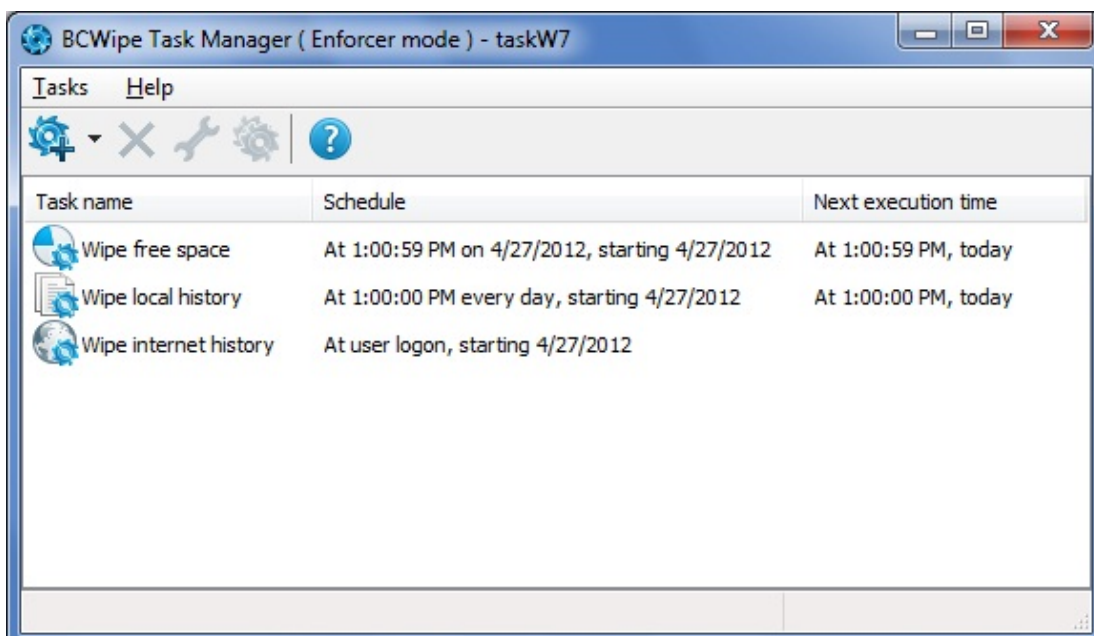
To create **BCWipe Task Set** administrator should click [**Create**] in the BCWipe tab and the following window will appear.



Enter Name and Comments for the new Task Set and click [**OK**] to create wiping tasks for the Task Set. The following window appears.



After closing the information message box run command **Create New Task** from **Tasks** menu and select type of wiping task you want to add to the Task Set. You can add as many wiping tasks to the Task Set as you want. For every type of wiping task you can set a schedule for running the task regularly on the client computer. Besides, every task has settings specific for the selected type of wiping task. Please read help documentation of BCWipe software to get a detailed information about all available types of wiping tasks and about their specific settings. After creating wiping tasks BCWipe Task Manager window will show all the tasks:



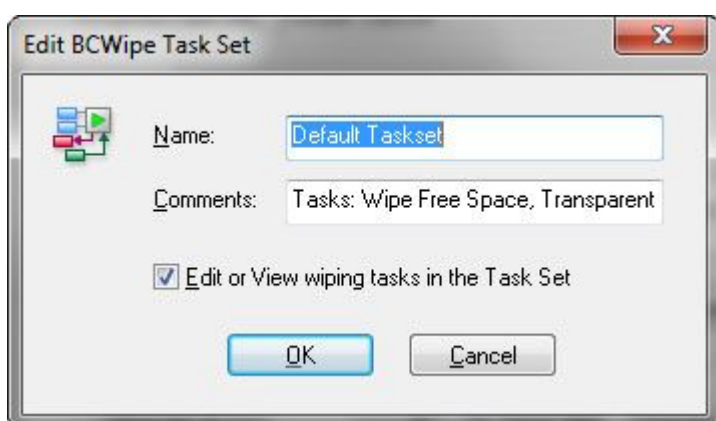
To save all the wiping tasks in a single Task Set file run command **Save Task Set** from **Tasks** menu. Then you can exit BCWipe Task Manager by running **Exit** command and find the Task Set listed in the *BCWipe* tab in the Jetico Central Manager Console.

Administrator can assign BCWipe Task Set to configure BCWipe client software on a remote computer as it is described in [Central Management of BCWipe](#) article.

## Editing BCWipe Task Set

Administrator of Jetico Central Manager can edit existing BCWipe Task Set. As soon as some Task Set is modified, group of remote computers where BCWipe is configured to use the Task Set receives the modified Task Set. As a result, administrator does not need to modify BCWipe settings on every computer, it is enough to modify a single Task Set used on all the computers.

To edit BCWipe Task Set select the Task Set in BCWipe tab of the Jetico Central Manager Console and click **[Edit]**. The following window will appear.



If you want to change name or comments for selected Task Set, edit corresponding strings in the *Name* or *Comments* edit boxes.

If you want to change or inspect wiping tasks in the selected Task Set, select **Edit or View wiping tasks in the Task Set** checkbox and click **[OK]**. BCWipe Task Manager window will appear with list of all the wiping tasks of the Task Set. You can select some wiping task and view or change its settings. When you finish editing wiping tasks, run command **Save Task File** from **Tasks** menu. Then you can exit BCWipe Task Manager by running **Exit** command.

To completely remove selected Task Set from the Jetico Central Manager Database click **[Delete]** in the BCWipe tab.

NOTE: When you attempt to delete some Task Set, Jetico Central Manager checks if there is any computer in a company network that uses the Task Set for configuration, or not. If the Task Set is used for configuration, Jetico Central Manager will send the warning message. If you confirm deleting the Task Set, the computer will stop using the Task Set and BCWipe on the computer will not run wiping tasks from the Task Set anymore.

**See also:**

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[Central Management of BCWipe](#)  
[BCWipe Enterprise Task Manager. Task Sets.](#)  
[Schedule for running BCWipe Tasks.](#)  
[Assigning BCWipe Task Sets to Client Computers](#)



# Assigning BCWipe Task Sets to Client Computers

Article Creating and editing BCWipe Task Sets describes idea of wiping Task Set as a data sent by Jetico Central Manager to remote computer to configure BCWipe client software running on the computer.

Administrator of Jetico Central Manager can change wiping tasks inside BCWipe Task Set. As a result, remote computer that uses the Task Set for BCWipe configuration will use updated set of wiping tasks. Besides, administrator can change Task Set for the computer and it will start using set of wiping tasks from other Task Set.

Jetico Central Manager supports computers united to *Computer Groups*. Administrator can create any number of Computer Groups and include any computer to any Computer Group. When the administrator manages BCWipe on remote computers, he/she can assign BCWipe Task Set to individual computer or to Computer Group. In the latter case all computers from the Group will get the same configuration for BCWipe software running on the computers. If the administrator changes the Task Set used for the Group, the set of wiping tasks running on all the computers from the Group will be updated.

Administrator of Jetico Central Manager assigns or changes BCWipe Task Set for computers in the [BCWipe tab](#) in Jetico Central Manager Console.

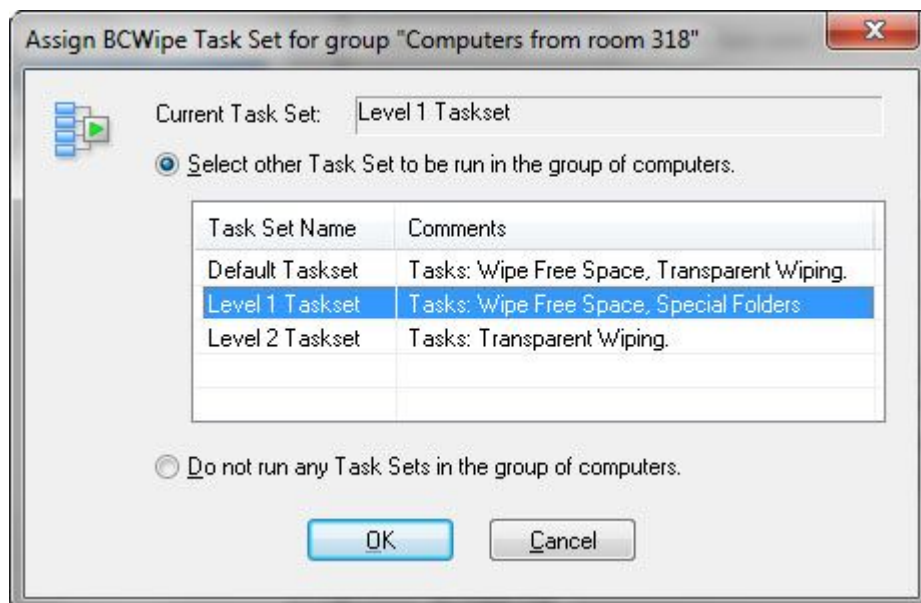
To assign selected Task Set to group of computers:

1. Select the group of computers in the left pane of Jetico Central Manager Console.
2. Set **Inherit Task Set from the computers' Group** radio button.
3. Select Task Set you want to use for the group of computers from the list of Task Sets.
4. Click **[Assign]**

To assign selected Task Set to an individual computer:

1. Select the computer in the left pane of Jetico Central Manager Console.
2. Set **Assign individual Task Set to the Computer** radio button.
3. Select Task Set you want to use for the computer from the list of Task Sets.
4. Click **[Assign]**

The following dialog window appears:



Caption of the dialog window shows name of computer or group, Current Task Set text box shows name of Task Set that is currently used on the computer(s).

To choose other Task Set for group of computers click **Select other Task Set to be run in the group of computers** radio button, select new Task Set from the list of available Task Sets and click **[OK]**.

If you decide to configure BCWipe on remote computer(s) so that the software would not run any wiping tasks, click ***Do not run any Task Sets in the group of computers*** radio button and click [OK].

After assigning or changing Task Set for the computer or group, name of the Task Set will appear in the Active Task Set text box in the [BCWipe tab](#) in Jetico Central Manager Console. Information about the change in BCWipe configuration will appear in the BCWipe Log window in the BCWipe tab. Remote computers will get BCWipe configuration updated as soon as they will be turned on and get access to a company network. Or, if the computers are active, after some period of time (up to several minutes) to avoid simultaneous access to the Jetico Central Manager Database and overloading company network or server computer.

#### See also:

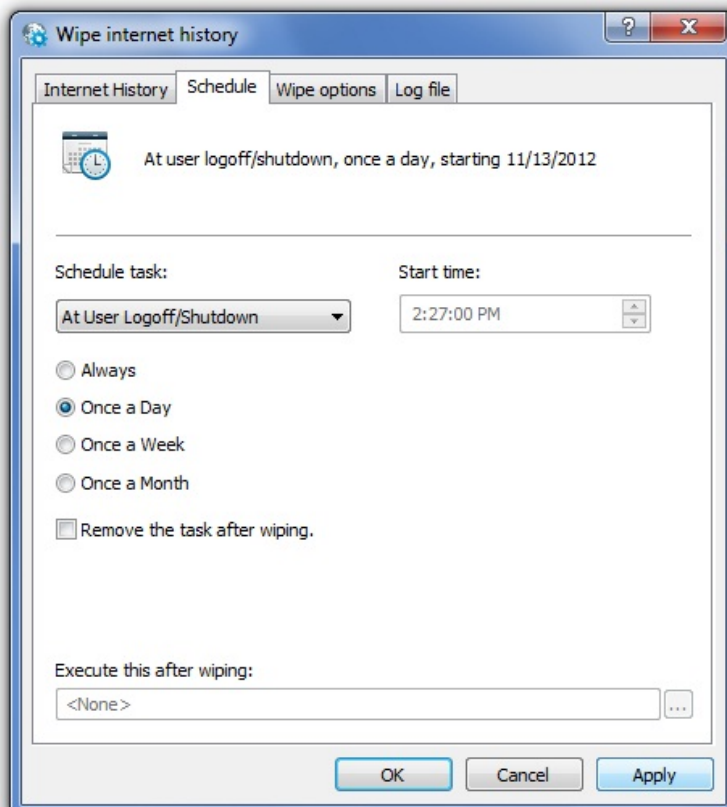
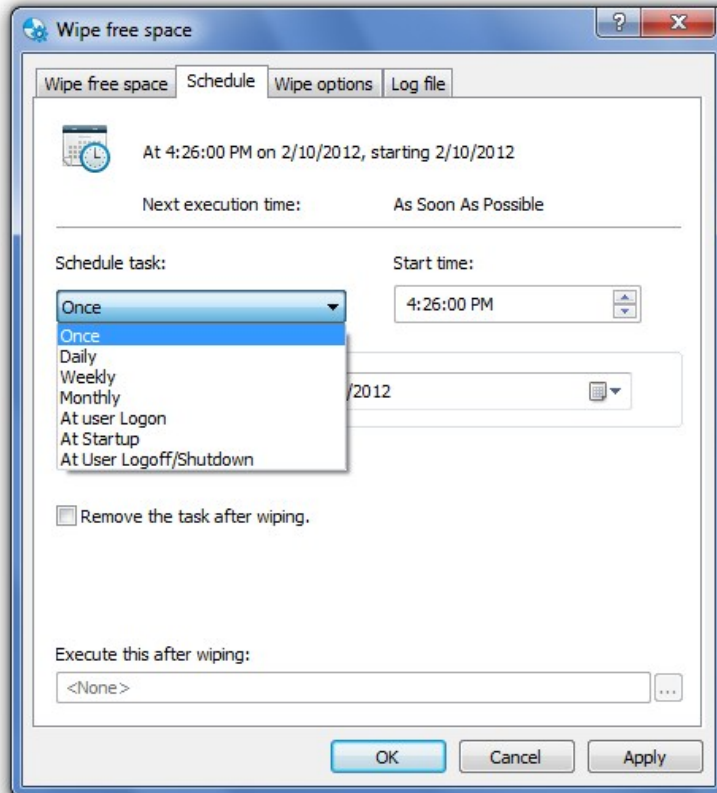
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[Central Management of BCWipe](#)  
[BCWipe Enterprise Task Manager. Task Sets.](#)  
[Schedule for running BCWipe Tasks.](#)

# Schedule for Running BCWipe Tasks Automatically

Any existing task (except **Transparent Wiping** and **Swap File Encryption**) can be run manually by running the **Start the selected task now** command in the **Tasks** menu of BCWipe Task Manager, or using the toolbar button.

To make BCWipe run a wiping task automatically, select **Schedule** tab in the **task properties** window.



**NOTE:** A user does not have to be logged on at the time when the task starts. Just be sure that the computer is turned ON, and the task will run. No user interaction is required; the task

is running in the background and no reports are displayed on the screen. The current status of a running task is reported in the **Status** column of BCWipe Task Manager. Use the log file to see task progress and wiping results. To open the assigned log file, run the **View log file** command in the right-click menu of the selected task. Use the **Terminate** command to cancel the process.

BCWipe supports the following types of schedules:

- **Once** This type of task schedule runs automatically at the time set in the **Start time** control box. If the user is not logged on at that time, the task will be started and the items will be wiped. The only exclusion is that registry items will be wiped later, when the user logs on. If the computer is turned off at the predefined time, the task will be launched at the next startup.
- **Daily**. This type of task schedule runs automatically every day at the time set in the **Start time** control box. You can also configure the task to be performed every 2nd, 3rd, or N-th day. If the user is not logged on at the predefined time, the task will be started and the items will be wiped. The only exclusion is that registry items will be wiped later, when the user logs on.
- **Weekly**. This type of task schedule runs automatically every week at the time set in the **Start time** control box. You can set a concrete day and time of the week for running the task. If the user is not logged on at the predefined time, the task will be started and the items will be wiped. The only exclusion is that registry items will be wiped later, when the user logs on.
- **Monthly**. This type of task schedule runs automatically every month at the time set in the **Start time** control box. You can set a specific week (first week ... last week), day of the week, and months when the wiping task must be run. If the user is not logged on at the predefined time, the task will be started and the items will be wiped. The only exclusion is that registry items will be wiped later, when the user logs on.
- **At logon**. This type of wiping task runs automatically when the user logs on. It is also possible to enable the options **Once a Day, Once a Week, Once a Month**.
- **At startup**. This type of wiping task runs automatically when the system starts. Registry items will be wiped at user logon. It is also possible to enable the options **Once a Day, Once a Week, Once a Month**.
- **At logoff/shutdown**. This type of wiping task runs automatically when the user logs off or shuts down. When the task is started, BCWipe allows to continue Logoff. In case if Logoff was launched - the wiping process will be continued after Logoff without user environment. In case if Shutdown was launched and the user continues Logoff - the wiping task will be terminated by the shutdown process. It is also possible to enable the options **Once a Day, Once a Week, Once a Month**.

**NOTE:** Windows **Group Policy** has a setting that determines how long the system waits for scripts applied by Group Policy to run. By default, the timeout is set to 10 minutes. If the wiping task takes more than 10 minutes to run, the system will continue logoff. Then, if "logoff" was launched, then the wiping task will still be running. But if "shutdown" was launched, then the shutdown process will terminate the running task. To prolong the timeout period, please do as follows (you must have administrative rights to perform these steps):

- Open Group Policy: Start --> Run --> type 'gpedit.msc'.
- In the left tab navigate to Computer Configuration --> Administrative Templates --> System --> Scripts
- Select **Maximum wait time for Group Policy scripts**, right-click and run the Properties command.
- Click the 'Enabled' radio-button and set seconds to zero.
- Click Apply --> OK.

# Transparent Wiping

Transparent Wiping Overview

Include and Exclude Lists

Transparent Wiping Icon in the System Tray

Transparent Wiping Logging

# Transparent Wiping overview

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While editing a Microsoft Office document or browsing the Internet, you might not realize that tons of information about your work is being written to or deleted from the disk without your knowledge. While a typical application is running, it generates temporary files, cache objects or other special system files that may contain confidential information. Even when these files are deleted, sensitive data that you intended to completely erase remains on your hard drive and could still be restored.

Jetico is introducing a higher level of protecting deleted information from unauthorized recovery – BCWipe’s **Transparent Wiping**. When **Transparent Wiping** task is activated on your computer, BCWipe will automatically wipe all contents of any file or folder that is deleted. Just configure Transparent Wiping according to your needs and activate!

Transparent Wiping securely deletes the following sensitive information on the fly:

- All files and folders that are deleted using normal commands
- Temporary files deleted by Windows applications and by Windows itself
- Data stored in Windows Restore Point when the Restore Point is deleted
- Data stored in Recycle Bin when Empty Recycle Bin is selected
- Or only specific types of files, folders or applications by configuring include/exclude lists

Transparent Wiping is compatible with Windows Recycle Bin and similar utilities. So after activating Transparent Wiping, your Recycle Bin will continue to work normally – except that now when Empty Recycle Bin is selected, all contents of the Recycle Bin will be permanently erased by BCWipe.

Transparent Wiping can be set to work only for specific files, folders or applications (or file/application patterns) by configuring include and exclude lists.

When Transparent Wiping is activated, the status is displayed by a special icon in the system tray.

BCWipe provides detailed logging of Transparent Wiping.

## See also:

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[Transparent Wiping task](#)

[Include and Exclude lists](#)

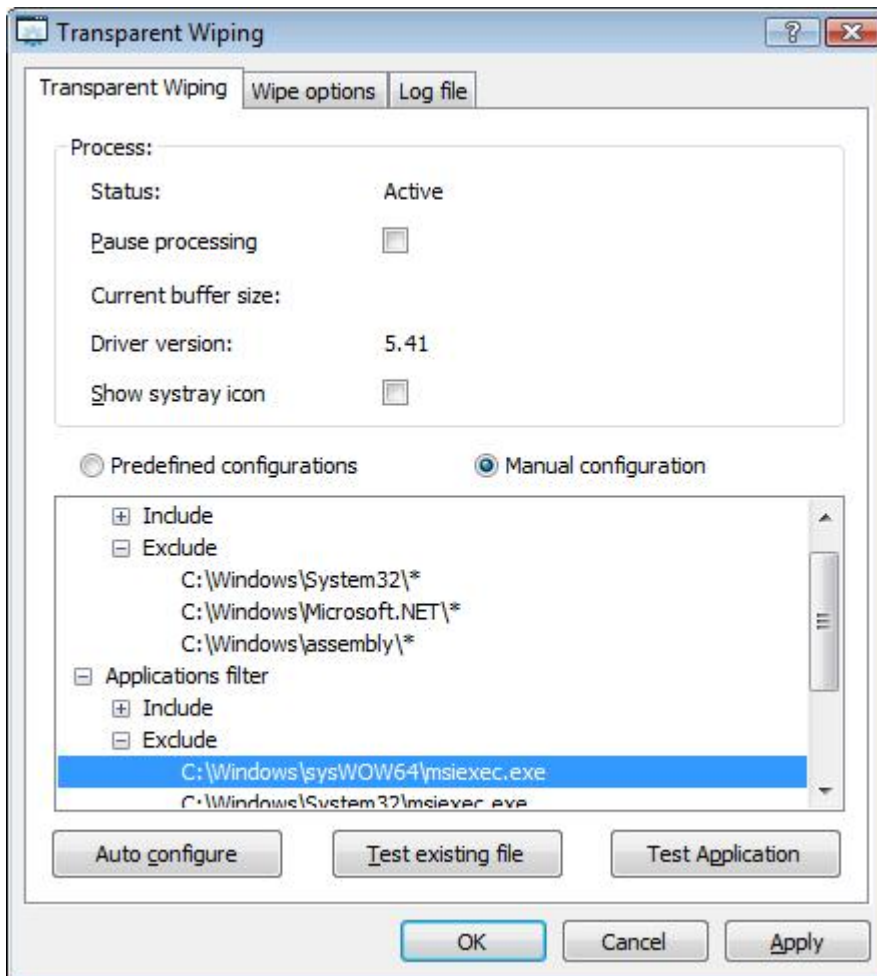
[Transparent Wiping icon in the system tray](#)

[Transparent Wiping logging](#)

# Include and Exclude lists

Before Transparent Wiping starts working, administrator can configure it so that only selected files will be wiped and the rest will be just deleted.

The following dialog window is used for file list management:

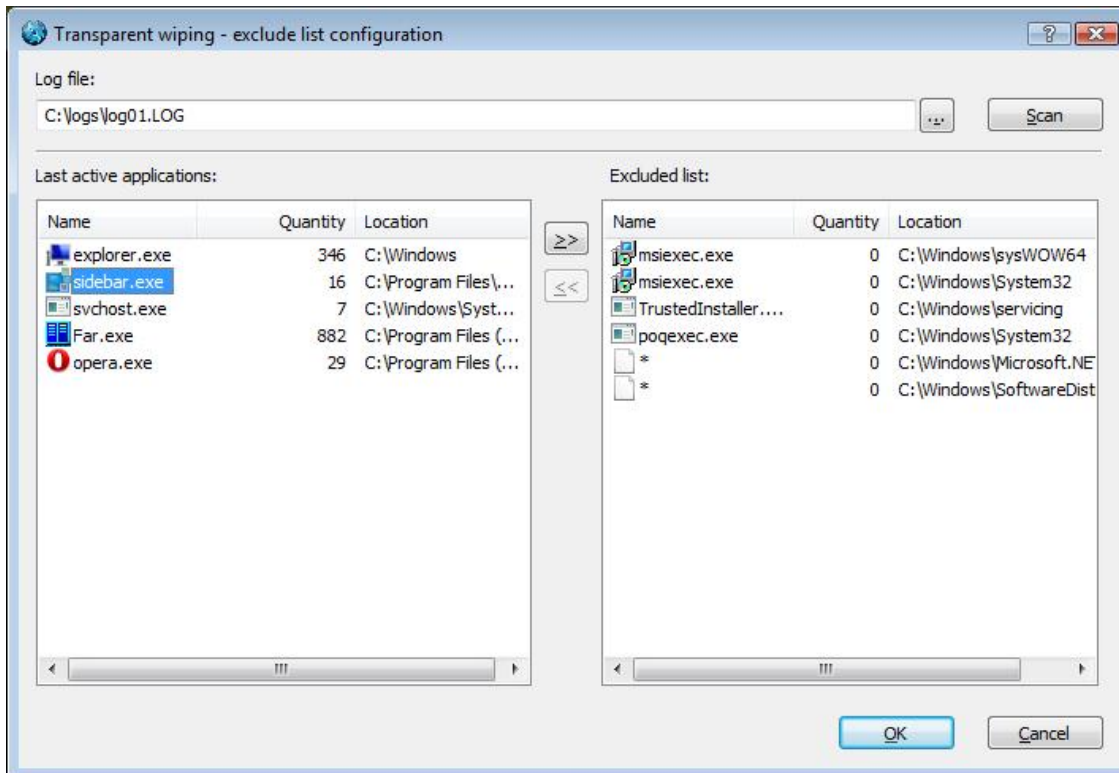


There are two ways to include or exclude files - by file name and by the application (or system process) that launches the deletion. These two ways are implemented through **File name filter** and **Application filter**. With the commands **Add file**, **Add folder** and **Add pattern** (which are available through right-click menu or using [Add]) users can add items in these lists. The pattern items may contain asterisk (\*) which means any sequence of symbols.

## Automatic configuration of Excluded Applications list

Sometimes an excessive amount of temporary files are being deleted on the system beyond the capacity of this feature, so Transparent Wiping is not able to wipe all the files being deleted causing a rapid decrease in free disk space. This problem is typically caused by a conflict with an anti-virus or anti-spyware program. In that case, it is strongly recommended to add some folders and/or applications into **Exclude list**.

BCWipe contains **Transparent Wiping auto-configure** utility that helps to configure the list of Excluded applications. To use the utility click [Auto configure]. The utility will read the current log file assigned to the Transparent Wiping task, calculate the number of strings associated with each application and show the resulted statistics:



Click [**Scan**] to make the utility read the log file defined in the edit box.

Click column name **Name** or **Quantity** to sort the list by the name or by the number of occurrences.

Use [>>] or [<<] to add or remove items to configure the Exclude list.

After putting the desired items, click **OK**.

After configuring excluded and included items, there are four lists:

- Items included by file name
- Items excluded by file name
- Items included by application name
- Items excluded by application name

**THE MAIN RULE:** a file will be wiped only if it matches both **included** pattern and does not match both **excluded** patterns.

The default configuration is:

- Included file name list: \*
- Excluded file name list: empty
- Included application list: \*
- Excluded application list: empty

In such configuration all the deleted files are wiped.

To return back to default configuration, click [**Reset to default**].



# Transparent Wiping icon in the system tray

After activation of Transparent Wiping, if you enabled the option **Show systray icon**, new icon will appear in system tray area (notification area):



The icon performs several functions:

1. Report the current status of Transparent Wiping task if you point to the icon by mouse. The following states are possible:

- **active** - the functionality is enabled and the deleted files are wiped.
- **paused** - the deleted files are moved to BCWipe temporary folder and deleted in usual way.

The icon will indicate **paused** status of the process as follows:



- **no Transparent Wiping task** - there is no Transparent Wiping task in BCWipe Task Manager. The driver has been loaded, but is not active - the deleted files are not moved to BCWipe folder.
- **disabled** - not all modules needed for transparent wiping have been loaded.

2. If you click on the icon by left mouse button - **Transparent Wiping** task will be opened

3. If you click on the icon by right mouse button - list of the commands will appear. You can:

- open **BCWipe Task Manager**,
- **View Log File**
- **Pause/Resume** Transparent Wiping.

4. If BCWipe temporary folder has become large and Transparent Wiping process is currently wiping the folder, the icon will indicate the pressure of work by red color:



Note that you can hide the Transparent Wiping tray icon by unchecking the checkbox **Show systray icon** in Transparent Wiping task properties window.

# Transparent Wiping Logging

Transparent Wiping task can generate detailed progress report. The name of the logfile is specified on **Log file** page of **Transparent Wiping** task window. **Log Viewer** utility allows viewing the process while it is running.

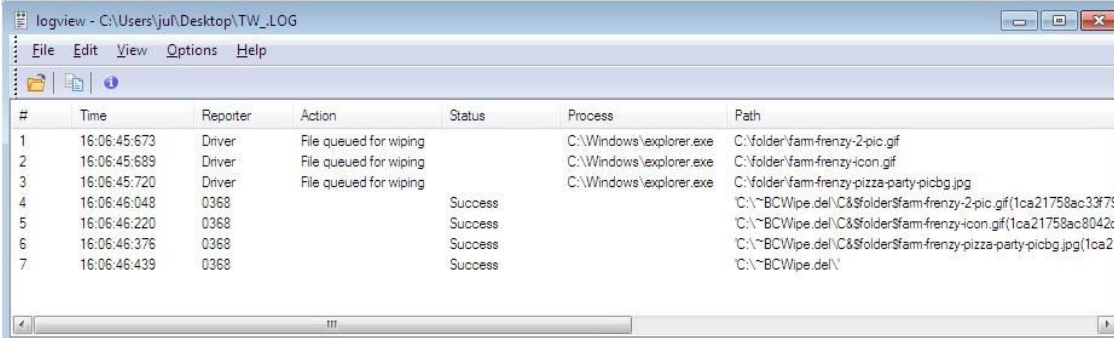
The procedure of Transparent Wiping consists of two steps:

- Interception of 'Delete' operation and moving the file to BCWipe temporary folder. This step is performed by special low-level driver (fsh.sys). After moving the file the driver reports to the logfile: **file queued for wiping**.

If the driver reports that the file was not moved, it specifies the reason. For example, **the file is in exclude file list**. Additionally, FSH.SYS reports the name of the process that launched the 'Delete' operation. This field is helpful for setting up an **Application Filter**.

- Wiping the file. The step is performed by standard BCWipe application. It reports time, code of the wiping process, file name and the result of wiping.

Example of the log file generated after transparent wiping of three files:



#	Time	Reporter	Action	Status	Process	Path
1	16:06:45:673	Driver	File queued for wiping		C:\Windows\explorer.exe	C:\folder\fam-frenzy-2-pic.gif
2	16:06:45:689	Driver	File queued for wiping		C:\Windows\explorer.exe	C:\folder\fam-frenzy-icon.gif
3	16:06:45:720	Driver	File queued for wiping		C:\Windows\explorer.exe	C:\folder\fam-frenzy-pizza-party-picbg.jpg
4	16:06:46:048	0368		Success		C:\~BCWipe.del\C&\$folder\$fam-frenzy-2-pic.gif(1ca21758ac3f79
5	16:06:46:220	0368		Success		C:\~BCWipe.del\C&\$folder\$fam-frenzy-icon.gif(1ca21758ac8042d
6	16:06:46:376	0368		Success		C:\~BCWipe.del\C&\$folder\$fam-frenzy-pizza-party-picbg.jpg(1ca21
7	16:06:46:439	0368		Success		C:\~BCWipe.del\

## See also:

[Logging functionality of BCWipe Enterprise](#)  
[Log File Viewer](#)

# Logging

Logging Functionality of BCWipe Enterprise

Log File Viewer

# Logging Functionality of BCWipe Enterprise

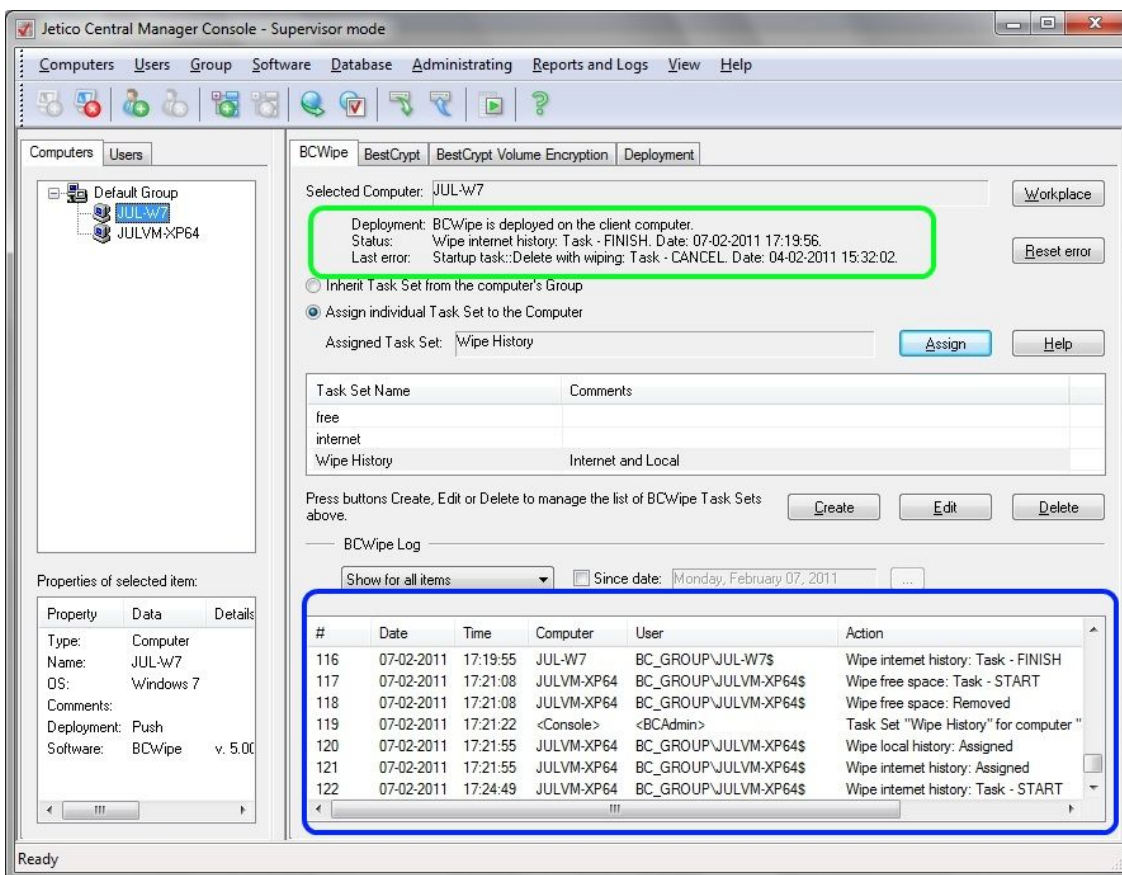
BCWipe Enterprise provides the following ways to monitor the results of wiping processes on client computers:

- **Status** and **Last error** strings reported on the top part of the BCWipe tab.

On the picture below this area is outlined by green. The information is related to the computer selected in the left pane.

- Log information shown in the **BCWipe Log** field in BCWipe tab of Jetico Central Manager Console.

This log file is stored in JCM Database. It contains short reports from clients like "task start" "task finish" "canceled", etc. and also reports from JCM console like "task set assigned", "task set modified". The following picture illustrates the log file (outlined by blue). By right-clicking on this area one can copy the line to clipboard as well configure search options



- Detailed Log file generated by BCWipe process on the client computers. To assign a log file to a wiping task, select **Log file** page in the **task properties** window.

**Wipe free space**

Wipe free space | Schedule | Wipe options | **Log file**

Use local path to store the log file on client machines.  
Example:  
C:\folder\log\_name.log

Use network path to store the log file on a network share.  
Example:  
\\server\share\folder\log\_name.log

Please provide suitable user account information to allow BCWipe log on and access the network share.

User: jul Test  
Domain: DOMAIN  
Password: •••••

Add pattern %computername% to the folder or file name to distinguish log files from different clients.  
Example:  
\\server\share\logfiles\%computername%\wipe.log  
\\server\share\%computername%\wipe.log

Path: \\jul-right\logs\%computername%.log

☐ Truncate previous content  
☒ Append to previous content  
☐ Maximum appended size (in kB): 1,024

OK Cancel Apply

The log file can be stored on the client computers. In that case, administrator should write the local path like **C:\logfiles**.

Another way - store all the log files on a **network shared location** (perhaps on the same server where database is installed, but it is not necessary). In that case, the question is: how to differ the log files that come from different clients? BCWipe offers the solution - add **%computername%** to the name of the file or folder.  
The picture above shows the right syntax.

**See also:**

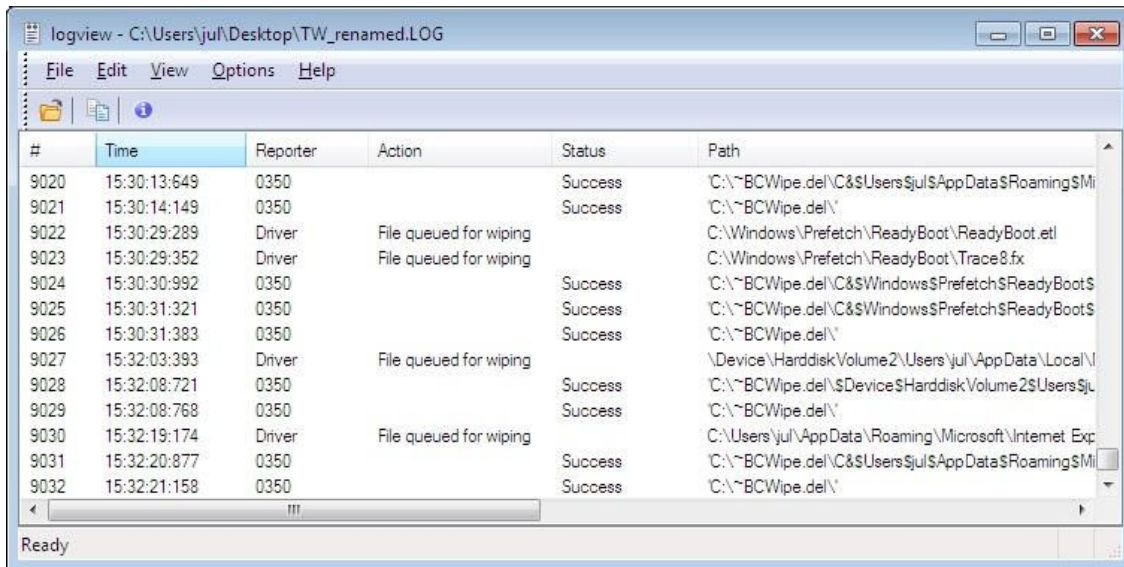
[Log File Viewer](#)

# Log File Viewer

The BCWipe software includes **Log Viewer** utility.

The log file can be generated by any BCWipe task, the Log Viewer gets the logfile as input file and shows its contents in a readable way. The information is shown by Log Viewer dynamically, i.e. the user can open the Log Viewer and monitor the process while it is being performed.

Log Viewer window looks like:

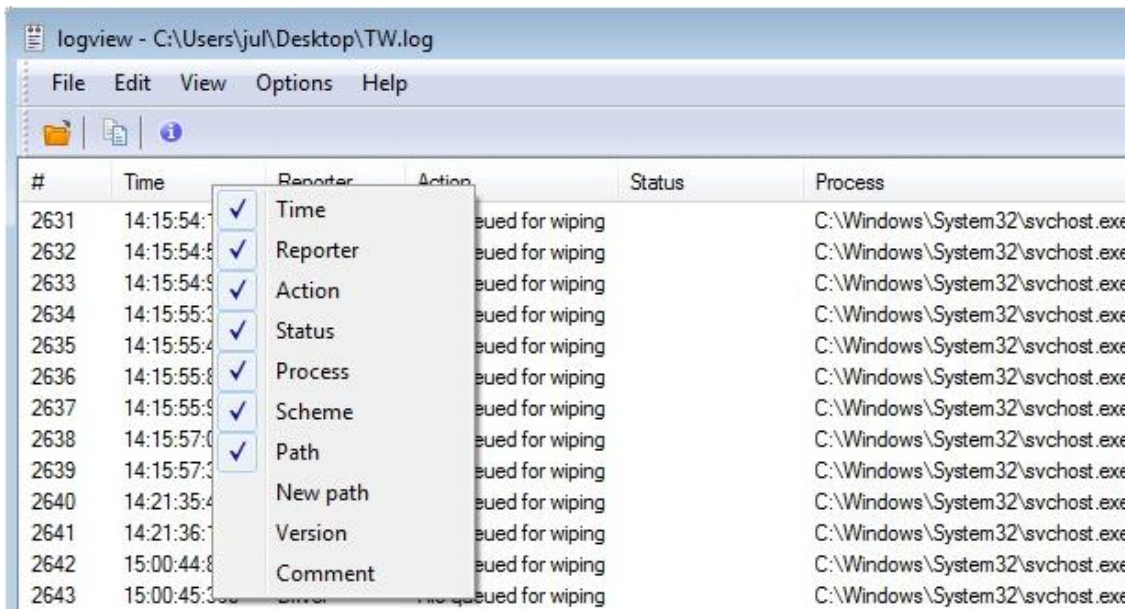


The following information is gathered and displayed by Log Viewer in separate columns:

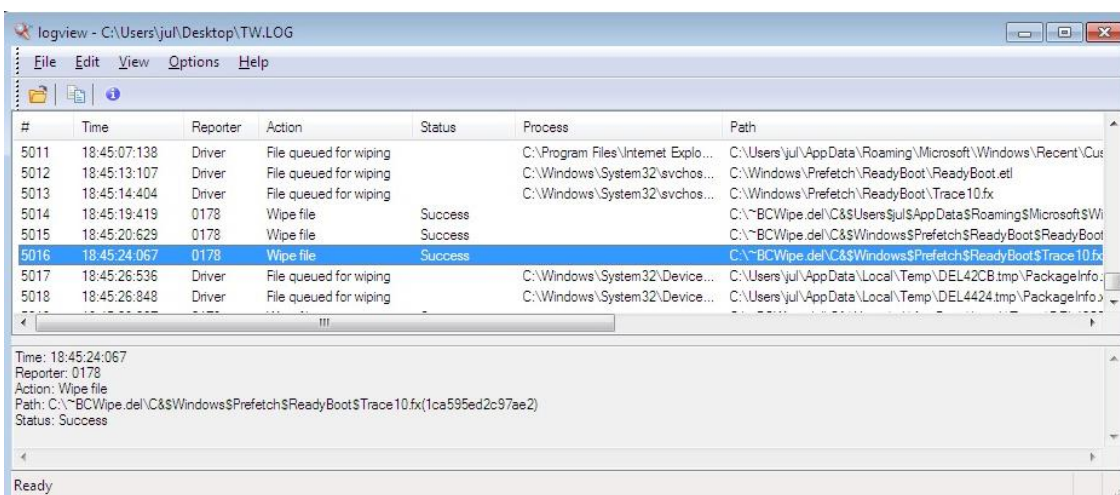
- **#** - line number
- **Time** - time of the operation
- **Reporter** - code of the process
- **Action** - operation performed
- **Status** - result of the action
- **Process** - for Transparent Wiping - the name of the process which deleted the file
- **Scheme** - wiping scheme
- **Path** - full name of the file or directory
- **New Path** - if the action is 'renaming' then new path is reported here
- **Version** -
- **Comment** - reserved column

To hide/show columns - right-click on the column name and mark the desired columns:

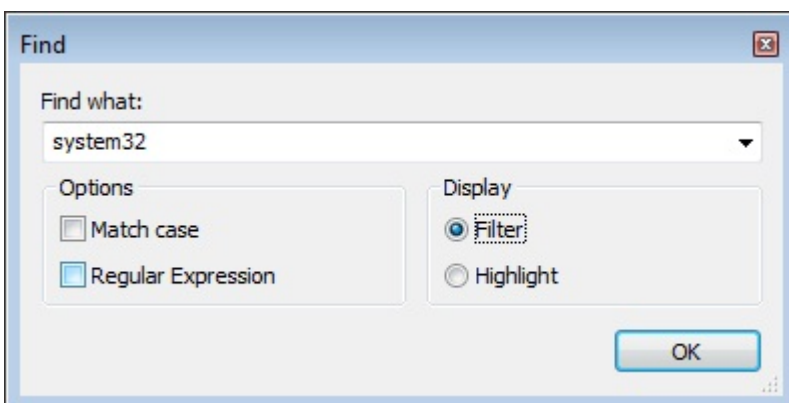




Enable the option **Details** in View menu to display the bottom pane where the selected string is shown in more details:



To search for a string - use Edit-->Find menu. The following window will appear:



In **Find what:** edit box - type a sequence of symbols to search for.

- Select **Filter** radio-button to show only the result of search procedure.
- Select **Highlight** radio-button to highlight the result of search procedure.
- Select **Match case** radio-button to make search procedure case-sensitive.
- Select **Regular Expression** radio-button to consider the typed sequence as **regular expression**.

A **regular expression** is a flexible form of search pattern description. Regular expressions act pretty like wildcards, but they are even more powerful.

Read the following articles to know more about regular expressions and basic syntax:

<http://www.regular-expressions.info/reference.html>,

[http://en.wikipedia.org/wiki/Regular\\_expression](http://en.wikipedia.org/wiki/Regular_expression)



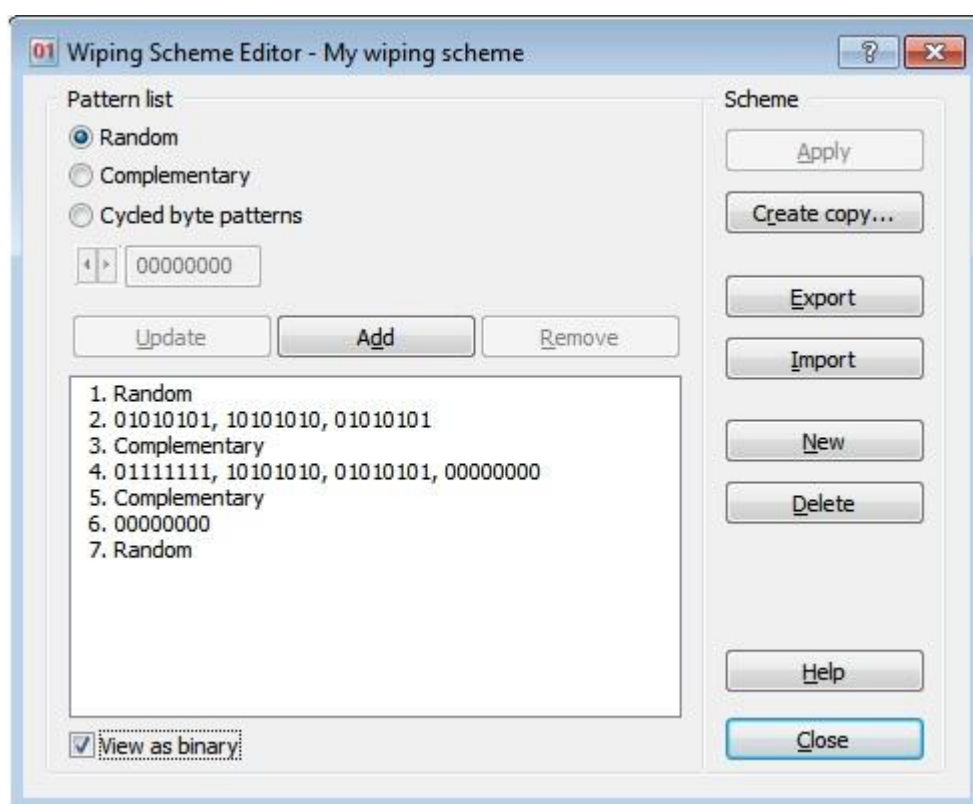
# Wiping Scheme Editor

The following wiping schemes are embedded in BCWipe:

- US DoD 5220.22-M(ECE) - 7 passes
- US DoD 5220.22-M(E) - 3 passes
- German BCI/VSITR
- US DoE - Department of Energy standard
- Bruce Schneier
- Peter Gutmann
- one random pass

Additionally, the software includes the **Wiping Scheme Editor** utility to view and edit number of wiping passes and binary patterns used at each pass.

Click [**Edit**] in the dialog window of any wiping command to get more details of the selected wiping scheme or create custom scheme. When you click, the following dialog window appears:



To create new scheme - click [**New**] and specify a name of your scheme. The picture illustrates creation of custom wiping scheme called 'My wiping scheme'. BCWipe performs 7 passes of wiping when it shreds information according to the scheme. 11 passes means that BCWipe overwrites the information 7 times, and uses different byte patterns for overwriting. For example, in the first and the last (7-th) passes BCWipe uses random bytes to overwrite data.

Then set the pattern type:

**Random** radio button - if you wish to use random bytes for overwriting;

**Complementary** - if you wish to use byte pattern complementary to the previous pass;

**Cycled byte patterns** - if you wish to set a concrete byte patterns for the wiping pass;

To insert additional pass to the scheme, click [**Add**].

To update existing pass, select the pass in the list of passes and click [**Update**].

To remove a pass from the wiping scheme, select the pass in the list of passes and click **[Remove]**.

When you finish editing the wiping scheme, click **[Apply]** to make BCWipe apply the new settings.

If you want to make a copy of existing wiping scheme and then edit the copy, click **[Create copy]**. BCWipe will ask you to enter a name for the new wiping scheme, and then will allow you to edit the new scheme.

Usually BCWipe stores wiping schemes in **Windows Registry** Database, but it is also possible to save them to files for further using the scheme on other computers. Procedure of saving the scheme to file is called **Export**, and procedure of loading wiping scheme from file is called **Import**. To save the wiping scheme to file, click **[Export]**, otherwise click **[Import]** if you wish to load a scheme from file.

To delete existing wiping scheme, click **[Delete]**

Click **[Help]** to get the information on creating or editing wiping schemes.

Click **[Close]** to quit **Wiping Scheme Editor**.

# How to run BCWipe from the command-line prompt

You may run BCWipe commands to wipe free space on the disk and delete files or folders with wiping from the command line prompt.

This allows you to insert wiping commands to your batch (\*.bat) files and then run the batch file when you wish to run a number of wiping procedures with custom parameters.

BCWipe Setup program installs the program **BCWipe.exe** to the directory you have chosen during installation.

All the commands of the BCWipe.exe program include the **Mode** parameter, which describes wiping scheme and can be one of the following:

- DoD - Seven passes predefined pattern scheme according to US DoD 5220.22-M standard, (default scheme);
- PG - Peter Gutmann 35-passes predefined pattern scheme;
- PF[file path name] - Previously created file with custom wiping scheme;
- PS[scheme name] - User defined wiping scheme, created with **Wiping Scheme Editor**
- UD[1..100] - User Defined Number of wiping passes (first passes use complement patterns, the last pass uses random buffer);

## Wipe free space

To wipe free space on hard drive partition, run BCWipe.exe with the following parameters:

BCWipe FreeSpace [-Mode] [-Options] [drive name]  
[Options]

- **NoSwapFile** - Disable swap file wiping ( by default it will be wiped );
- **NoFileSlack** - Disable file slack wiping ( by default it will be wiped );
- **NoEmptyRecycleBin** - Disable emptying Recycle Bin ( by default it will be erased );
- **NoDirEntries** - Disable directory entries wiping ( by default they will be wiped );
- **NoDirectoryNodeSlack** - Disable Directory Entries wiping on FAT and Directory Nodes wiping on NTFS;
- **NoMFTRecords** - Disable MFT records wiping;
- **NoNTFSLogFile** - Disable NTFS Log File (\$Logfile) wiping;
- **NoVerification** - Disable disk-level verification;
- **disableSR** - Delete Restore Points;

EXAMPLE:

> **BCWipe FreeSpace -DoD -NoFileSlack -NoEmptyRecycleBin -NoDirEntries C:**

## Delete with wiping

To delete files or folders run BCWipe.exe this way:

BCWipe Delete [-Mode] [-Options] [file or folder name or @listFile] [file or folder name]...

[Options]

- **NoSwapFile** - Disable swap file wiping ( by default it will be wiped );
- **NoDirEntries** - Disable directory entries wiping ( by default they will be wiped on FAT drives );
- **NoDirectoryNodeSlack** - Disable Directory Entries wiping on FAT and Directory Nodes wiping on NTFS ;
- **NoMFTRecords** - Disable MFT records wiping;
- **NoNTFSLogFile** - Disable NTFS Log File (\$Logfile) wiping;
- **NoVerification** - Disable disk-level verification;
- **disableSR** - Delete Restore Points;
- **View** - Start **BCView** after wiping file contents and before final deleting the file.

- **@listFile** - Text file where every file name starts from a new line.

EXAMPLES:

> **BCWipe Delete -PG -NoSwapFile -NoDirEntries -View C:\SecureData.doc**

> **BCWipe Delete C:\Test**

will delete ALL FILES IN THE FOLDER , and REMOVE THE FOLDER ITSELF! Compare the command with the following one:

> **BCWipe Delete C:\Test\\*.\***

In the last example BCWipe deletes files inside the Test folder, but does not delete the folder.

## Swap file wiping

To wipe the swap file, run BCWipe.exe with the following parameters:

BCWipe WipeSwapFile [-Mode]

EXAMPLE:

> **BCWipe WipeSwapFile -UD1**

## File slacks wiping

To run BCWipe for wiping file slacks, run BCWipe.exe with the following parameters:

BCWipe.exe FileSlack [-Mode] [-Options] [file or folder name or @listFile] [file or folder name]...

[Options]

- **View** - Start **BCView** twice before and after file slack wiping.
- **@listFile** - Text file where every file name starts from a new line.

EXAMPLE:

> **BCWipe FileSlack -UD3 -View C:\Test.txt**

Note that when you run BCWipe.exe with the **FileSlack** parameter, the program does not shred the file itself, it only wipes slack of the file. Neither contents of the file, nor its attributes become changed.

**ATTENTION:** the BCWipe.exe utility works without asking any additional confirmation for deleting files and for wiping free space on the disk. The program is designed so to provide a silent functionality when you run it from batch files.

## Common options:

- **-Hidden** - allows running the wiping utility in background,
- **-SuperHidden** - same as previous, but it also hides the free space wiping progress bar,
- **-ExtendedErrorCodes** - activates extended error code mapping;
- **-LF [log file name]** - assigns log file for wiping process, use quote for names containing spaces.
- **-LS[size in KBytes]** - allows size limitation for the log file.
- **-ErrorLoggingOnly** - only log strings containing 'Error';
- **-ForceAPI** - if all options are disabled, BCWipe won't load DefragAPI module. This flag forces BCWipe to load it anyway. It may be required to properly wipe encrypted/compressed files;

EXAMPLE:

> **BCWipe Delete -Hidden -LF "C:\BCWipe.log" -LS200 C:\Test\\*.\***

# If You Want to Comment on the Software

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If you have a product suggestion or comments on how to make BCWipe documentation better, send us E-mail at this Internet address:

***support@jetico.com***

Be sure to include your name, e-mail, version number of BCWipe. Please visit Jetico WWW-site to get information about our other products, Frequently Asked Questions lists, Download Evaluation Software page and other:

<http://www.jetico.com/download.htm>

We are always trying to improve BCWipe. User feedback is important and extremely valuable to the development team.

Thank you for your time!

Jetico Team