



SAFE Block Win8-10 User's Guide

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What is SAFE Block Win8-10?

SAFE Block Win8-10 is a software-based write blocker designed for the Windows 8.x Operating Systems. SAFE Block Win8-10 will not run on versions of Windows other than Windows 8.x. SAFE Block Win8-10 provides for the quick and safe acquisition and/or analysis of any disk or flash storage media attached directly to your forensic workstation.

- **Simple:** SAFE Block Win8-10 is a simple Windows interface that allows the user the ability to block and un-block any disk or flash storage device detected by Windows. Devices are listed in a tree by type (USB, SCSI, IDE) and, where appropriate, by controller and channel.
- **Block Multiple Devices:** SAFE Block Win8-10 provides the ability to simultaneously write block as many disk devices as are connected to a computer, without the need for multiple expensive hardware write blocking devices.
- **Application Independent:** SAFE Block Win8-10 is application independent and works with all forensic acquisition and analysis applications that run on Windows 8.x.
- **Faster Than Hardware:** SAFE Block Win8-10 allows for write-blocked, Windows-based, disk imaging speeds that are up to 10 times faster than imaging in Windows using commercially available hardware-based write blockers. Hardware write blockers use interface bridges, hardware and firmware to write protect media, and in doing so bottleneck your throughput. SAFE Block Win8-10 provides for full unrestricted I/O throughput with all your controller interfaces for drive to drive imaging with no bottleneck.
- **Automatic Write Blocking:** SAFE Block Win8-10 provides automatic write blocking of all directly attached disk and flash media, including IDE (PATA and SATA), SCSI, SAS, Fiber Channel, USB, IEEE 1394, card readers (i.e. MS, MS Pro, MS Pro Duo, SD, DHC, MMC, RS MMC, XD, M2, MicroSD, Compact Flash, etc.) and all other mass storage devices. The user controls automatic write blocking policies for fixed and/or removable disks. The user can have SAFE Block Win8-10 remember the blocked or un-blocked status of fixed and external hard disk media for ease of use on media repeatedly used on a workstation. Remembering of USB devices classified by Windows as “removable media” cannot be “remembered.”

Installation

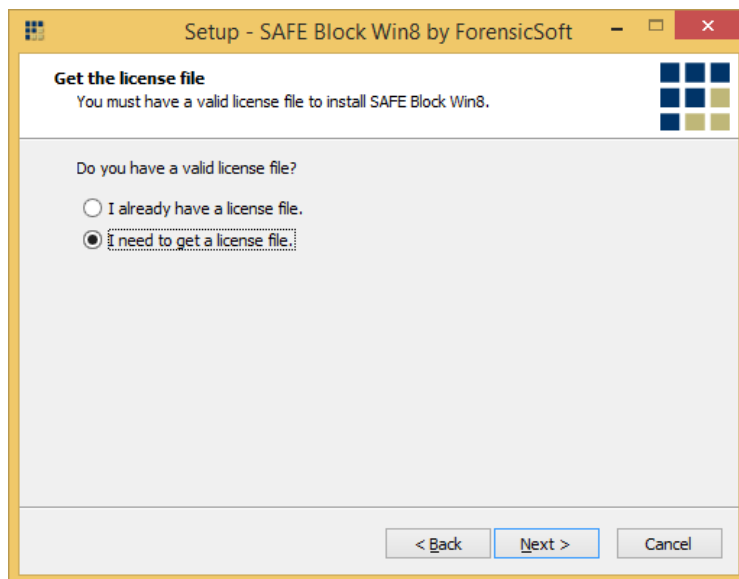
License File

The license file is obtained from <https://www.forensicsoft.com/>.

There are two kinds of licenses: **trial** and **full**

- A trial license is free, time-constrained, will work on any Windows 8.x machine (it is not tied to a specific machine), and does not require registration.
- A full license must be purchased, is not time-constrained, must be registered on the <https://www.forensicsoft.com/> web site using a unique Machine ID provided by the installer, and is then tied to work only on that machine. The license may not be moved or used on another machine after registration. If you upgrade your workstation's hardware or BIOS, your unique Machine ID will change and SAFE Block will require you to re-register your license. To re-register your license, please email support@forensicsoft.com describing any system changes and stating that you wish to re-register your license.

The SAFE Block Win8-10 installer will ask you if you have a license.



If you have downloaded a trial license, or have purchased and registered a full license, then select "I already have a license file" and skip to "License Browse" section below in this help file.

I need to get a license file

If you have purchased a full license, but have not registered it yet and downloaded your "license.dat" license file, then select "I need to get a license file." The following screen will appear:

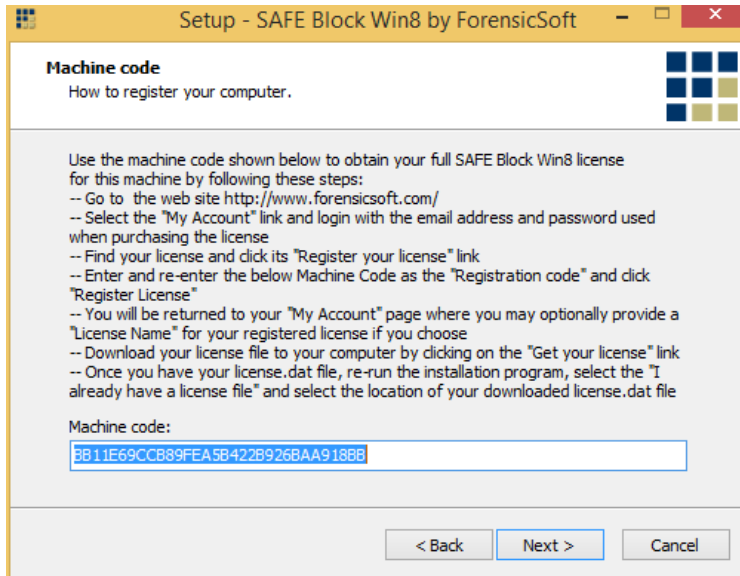


Figure 1

The Machine Code shown at the bottom is what you enter at the <https://www.forensicsoft.com/> web site to register your product and obtain your license. In the installer window (Figure 1) you can click and drag over the number to select it, right click and choose "copy" so that you can paste it into the appropriate box on <https://www.forensicsoft.com/>. If you are registering your license using a different computer than the one on which you are installing SAFE Block Win8-10, then copy/paste the Machine Code into Notepad and save the code in a text file to carry via USB to the Internet-connected computer you are using to register the Machine Code online.

Once you have your unique Machine Code, obtain your full SAFE Block Win8-10 license for this machine by following these steps:

- Go to the web site <https://www.forensicsoft.com/>
- Select the "My Account" link and login with the email address and password used when purchasing the license
- Find your license and click its "Register your license" link
- Enter and re-enter the below Machine Code as the "Registration code" and click "Register License"
- You will be returned to your "My Account" page where you may optionally provide a "License Name" for your registered license if you choose.
- Download your license file to your computer by clicking on the "Get your license" link
- Do not modify the license file in any way – doing so invalidates the license
- In the next Setup screen, select the location of the downloaded license.dat file.
- If you are installing SAFE Block on a computer other than the one used to download the license.dat file, save the downloaded license.dat to a USB disk and carry it to the computer on which you are installing SAFE Block. Run the installer on the offline computer and select "I already have a license file" to select the downloaded license.dat file.

I already have a license file

The SAFE Block Win8-10 installer will prompt you to browse to the license file as shown below in Figure 2.

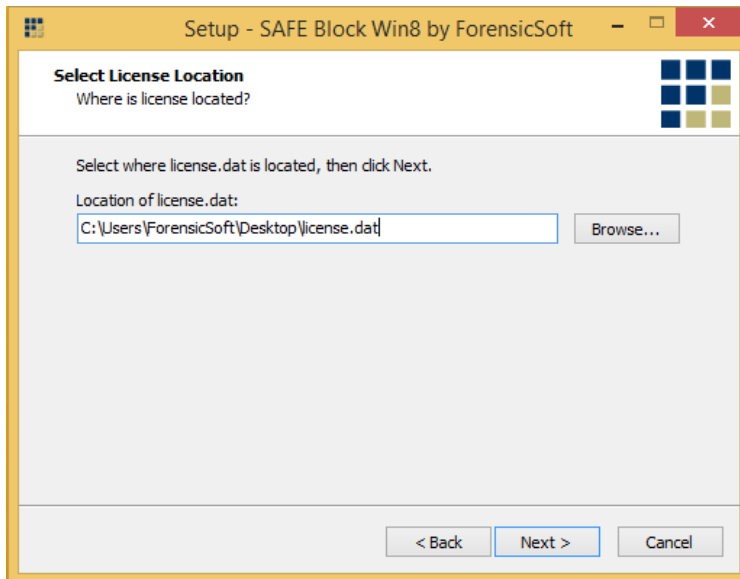
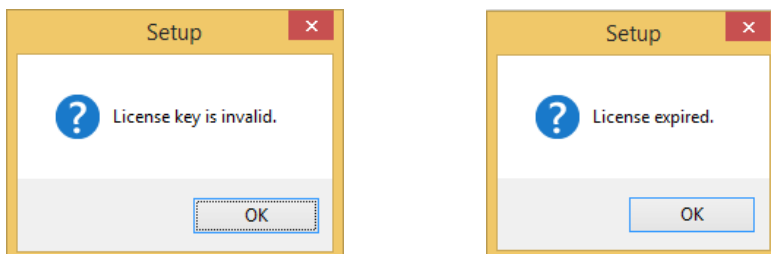


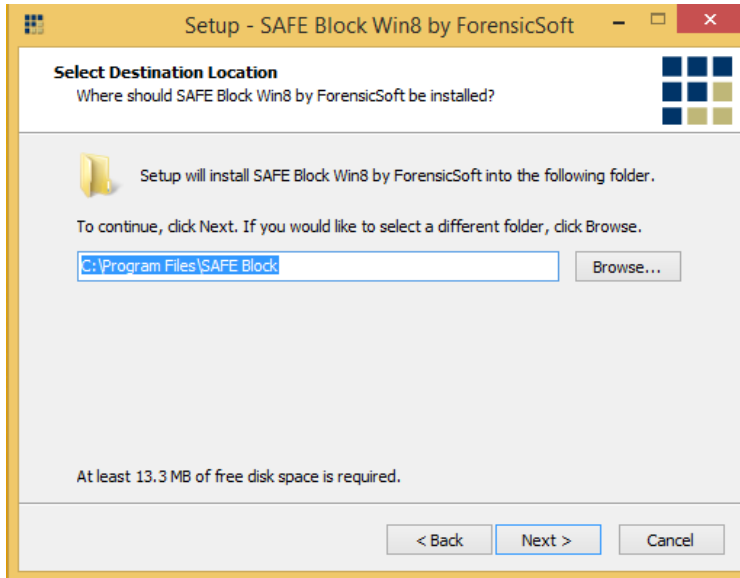
Figure 2

If your license is corrupt or invalid, or you have a trial license that is expired, the installer will alert you with one of the below errors.



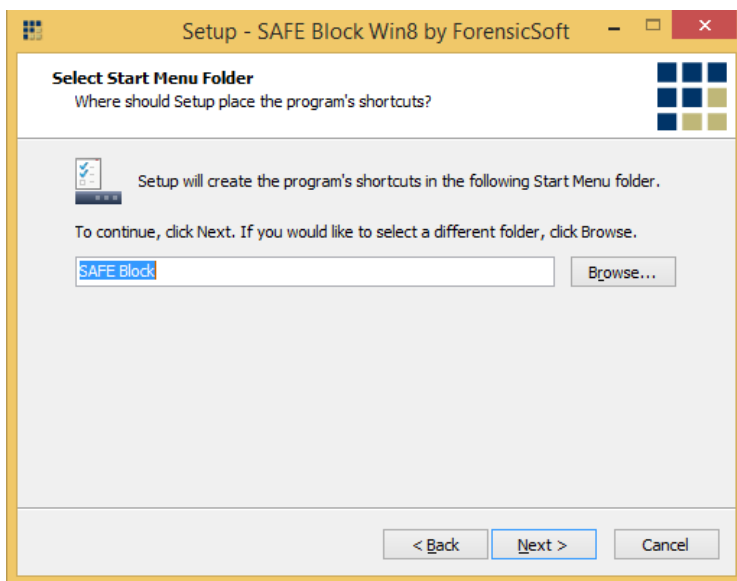
If a valid full or valid and unexpired trial license is selected then the license file will be copied and kept in the SAFE Block installation folder by the installation program and you will move to the next screen in the installation program.

Select the SAFE Block installation folder and click next.



The SAFE Block installation folder must be on the system disk, the disk on which the operating system is installed.

Next, select the Start Menu folder in which you would like program shortcuts to be created and click 'Next' to continue.



The Select Additional Tasks will default to the settings shown below in Figure 3. If you do not wish for the installer to create a desktop icon for SAFE Block Win8-10 or to pin SAFE Block Win8-10 to your Taskbar then unselect your desired options. Otherwise, click 'Next' to continue.

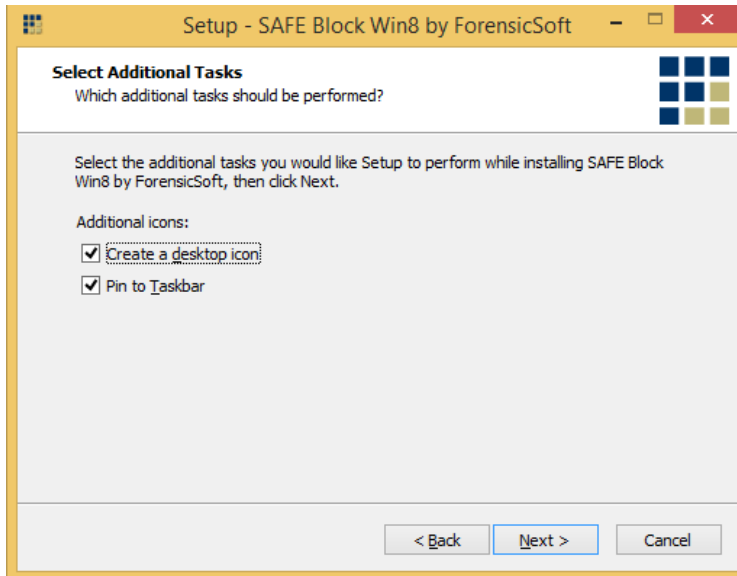
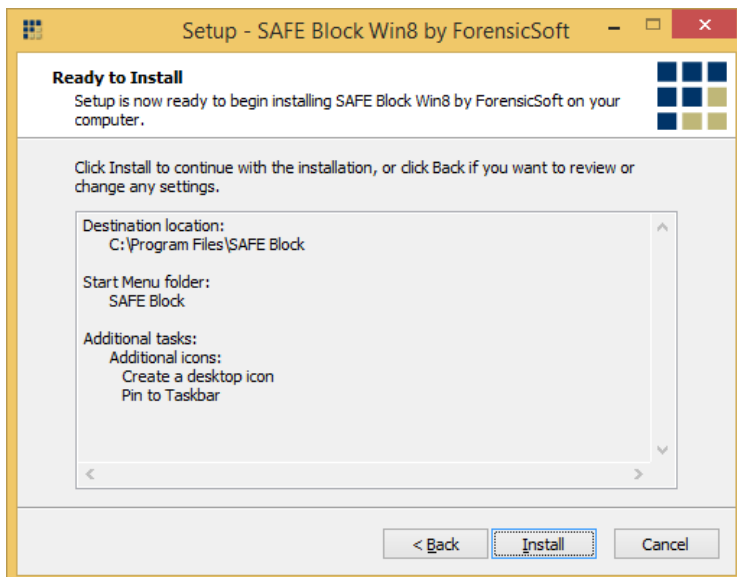


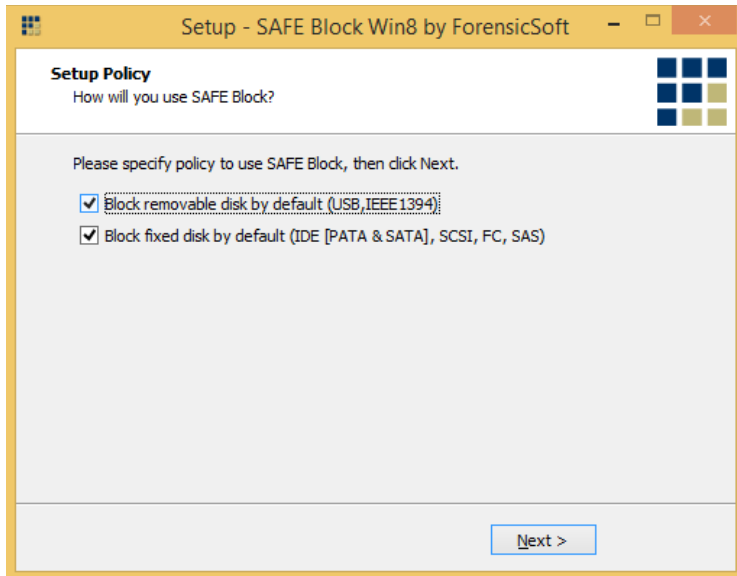
Figure 3

You are now ready to install SAFE Block Win8-10 and the installer will show you the options you have selected. If you wish to change anything at this point, select the 'Back' button, otherwise click 'Install' to install SAFE Block Win8-10.



Set Initial Default Blocking Policies

The installer will now ask you to set your desired default blocking policies, which will control how SAFE Block Win8-10 write protects removable and fixed disks when they are attached to your computer.



Block removable disk by default (USB, IEEE1394)

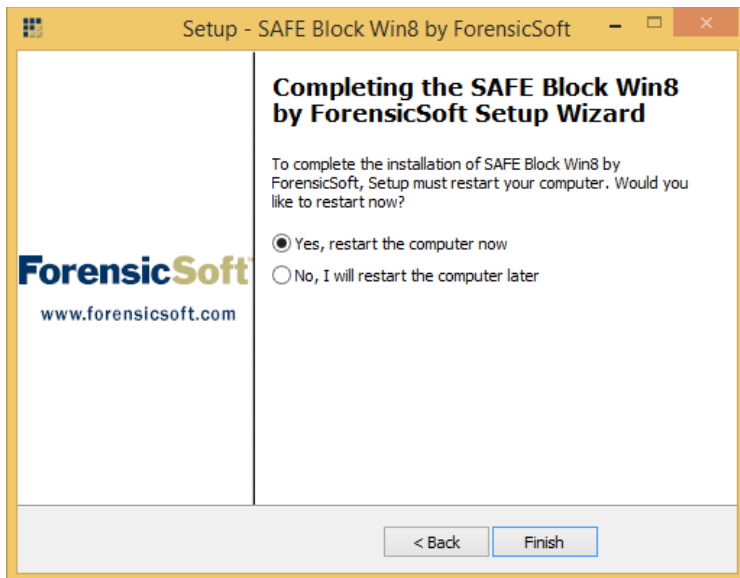
Checking this box means that removable drives, such as USB thumb drives, USB card readers, other flash media, and Firewire (IEEE1394) devices will be write-blocked by default both at boot time and when they are connected to a running system.

Block fixed disk by default (IDE [PATA & SATA], SCSI, FC, SAS)

Checking this box means SAFE Block Win8-10 will block all fixed disks. *(Note: SAFE Block Win8-10 will not block your system disk, additional system disks you have configured on your system with a pagefile.sys, and and CD/DVD drives. Foreign (i.e. seized) system disks not from your system will be blocked according to your policy setting like any other storage disk.)*

If either box is not checked, the devices associated with unchecked box(es) will not be blocked by default when attached, but you can block them at any time through the SAFE Block Win8-10 GUI. These boxes set the initial default policies for SAFE Block Win8-10; default policies can be changed using the 'Setup' features within SAFE Block Win8-10 (see the Setup Help section). The original default is to have both boxes checked, which provides maximum protection for forensic use.

You must re-start your computer after installation to activate SAFE Block Win8-10.



Using SAFE Block Win8-10

SAFE Block Win8-10 runs automatically when the computer boots. The SAFE Block Tray Monitor has an icon in the tray as shown in Figure 4 below.

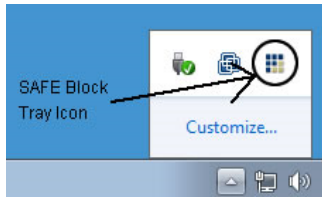
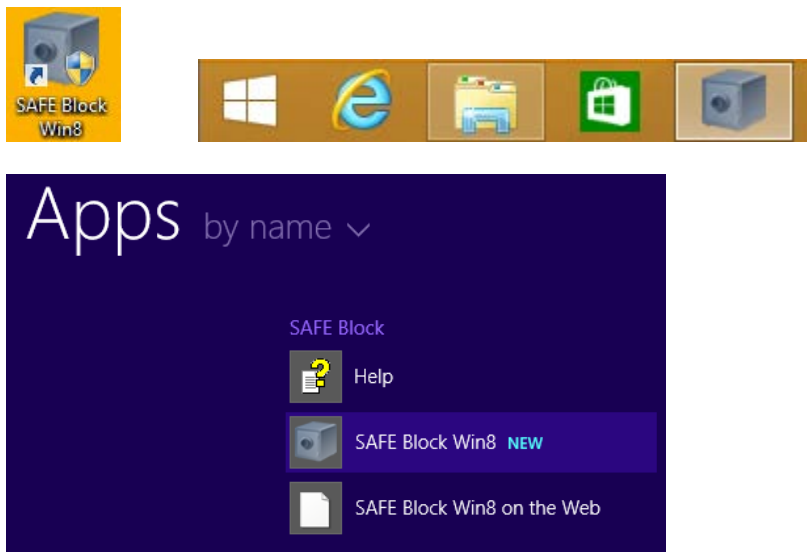


Figure 4

The Safe Block Win8-10 GUI can be invoked by double clicking on the tray icon, by double clicking the desktop icon, by single clicking the Taskbar pinned icon, or by accessing it through the Windows 8 Apps screen accessible from the Windows 8 Start Tile Screen.

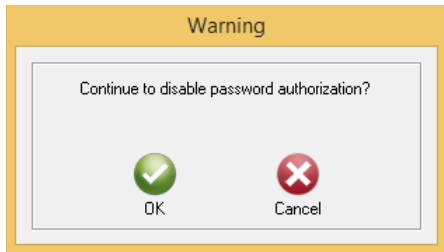


Password protecting the SAFE Block Win8-10 GUI

The first time that the Safe Block Win8-10 GUI is invoked after installation, it will ask you to setup a password. This password will be required by any user who wants to interact with SAFE Block Win8-10 to block, unblock or change settings regarding SAFE Block Win8-10 behavior.



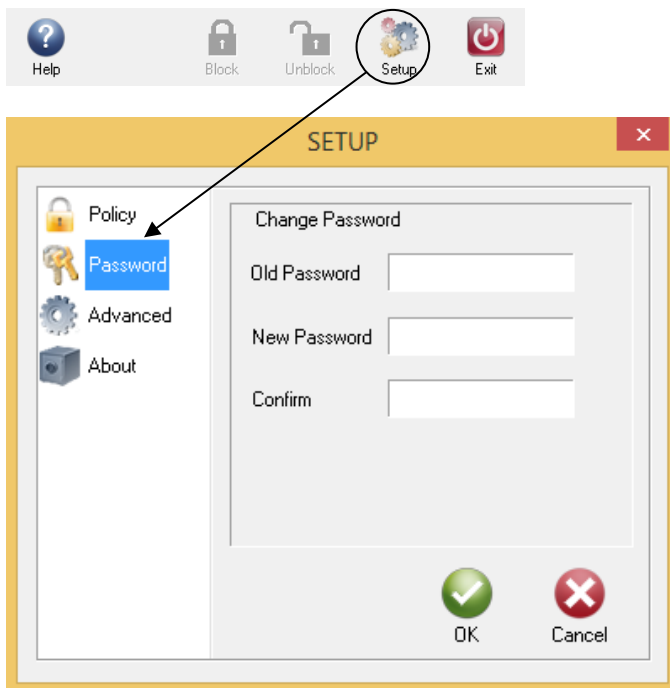
This password can be left blank if you do not wish to have a password protecting access to the SAFE Block Win8-10 GUI. If left blank and you click 'OK', SAFE Block Win8-10 will ask you to confirm that you wish to disable GUI password protection.



If you set a password, this password must be used to access the SAFE Block Win8-10 GUI. You will be prompted with the following password prompt each time you open the SAFE Block Win8-10 GUI.



If you forget your password, re-installing SAFE Block Win8-10 will allow you to reset the password. If you wish to change your GUI password at any time, you can do so in the Setup/Password screen within the GUI by entering your old password and a new password of your choosing.



Blocking/Unblocking Drives

The main Safe Block Win7 interface is shown below in Figure 5:

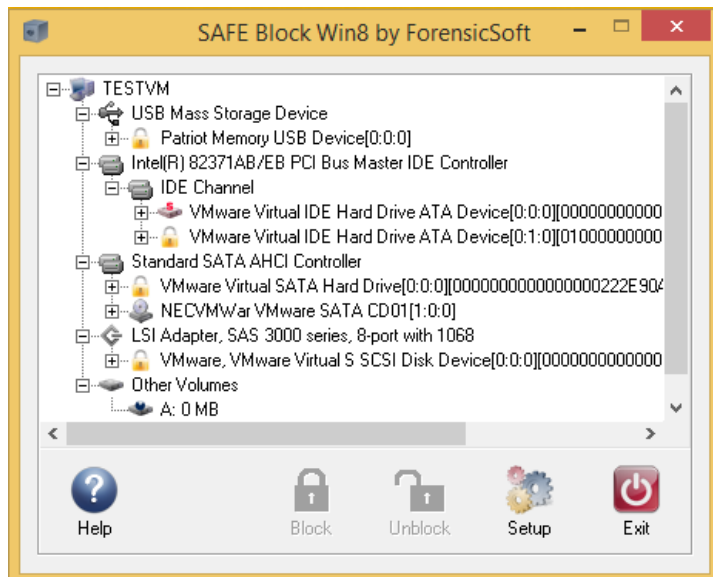





Figure 5

The interface shows a device tree organized by the system's bus controllers (IDE, SATA, SCSI, USB, etc.). Controllers that have multiple channels will display sub trees for each channel. The next level under each controller is the physical device. Any logical volumes on the physical device are listed under the physical device. Write blocking and unblocking takes place at the physical device level. Logical volumes and 'Other Volumes' are listed for information purposes only. You cannot block at the logical device/partition level.

To Block or Unblock a drive, select it by left-clicking the physical device in the device tree. Click the Block or Unblock button at the bottom of the main interface. A blocked device will have a padlock icon  in place of a normal disk icon in the device tree. An unblocked device will show a grey disk icon  in the device tree.

The system disk(s), which includes the disk on which the operating system and SAFE Block Win8-10 itself are installed, as well as any additional disk(s) from the local system that have been configured with a system pagefile.sys, will be indicated by a disk icon with a red "s" on the drive  in the device tree and cannot be blocked.

CD and DVD drives are not blocked by Safe Block Win8-10.

Blocking A Drive In Use

If you attempt to block an unblocked drive during system runtime, SAFE Block Win8-10 will inform you that you should close any and all files or applications that may be open on the drive or accessing the drive, as shown in Figure 6 below.

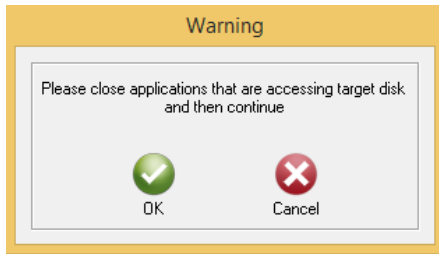


Figure 6

Once you click 'OK' SAFE Block Win8-10 will block the disk and display the status screen shown below in Figure 7, while performing the blocking process.



Figure 7

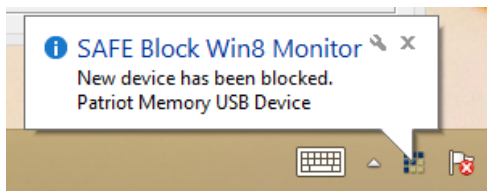
This disk will now be blocked and in a Read Only state.

If the disk you manually block is classified by Windows with a **'Media Type'** of **'External hard disk media'** or **'Fixed hard disk media'** SAFE Block Win8-10 has the ability to "Remember" the unblocked status of the disk. This feature allows you to automatically have this disk unblocked next time you attach it to this computer. If you turn on the "Remember status of fixed disks" policy setting, SAFE Block Win8-10 will now remember this disk as being unblocked and automatically unblock it the next time you attach the disk.

Attaching New Disks During Runtime

SAFE Block Win8-10 automatically detects the attachment of any new disk during runtime, whether the GUI is open or not.

For all disks classified by Windows with a **'Media Type'** of **'Removable Media'**, SAFE Block Win8-10 applies the default policy for the device (see the Setup Help section) and notifies the user by a message in the taskbar tray, as show here.



For all disks classified by Windows with a **'Media Type'** of **'External hard disk media'** or **'Fixed hard disk media'** SAFE Block Win8-10 will first check to see if your SAFE Block Win8-10 policy settings are set to

“Remember status of fixed disks” and if so, further checks to see if SAFE Block Win8-10 has seen this disk before and is set to remember the disk as blocked or unblocked regardless of the default policy settings.

If SAFE Block Win8-10 has remembered the attached disk, the SAFE Block Tray Monitor will display a message (shown below in Figure 8) indicating that the device has been blocked or unblocked according to the ‘Remember disk status policy’ setting.

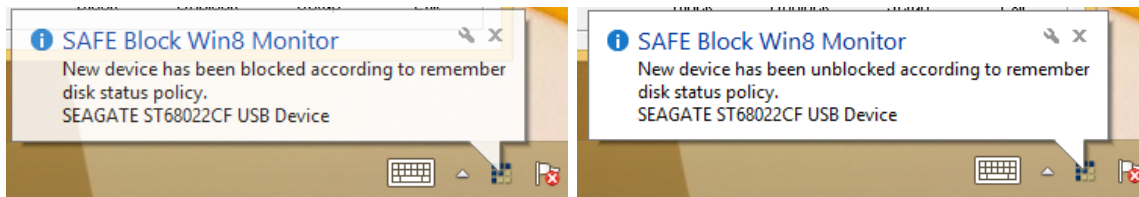
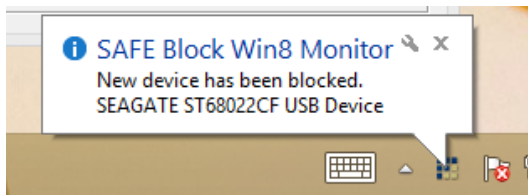


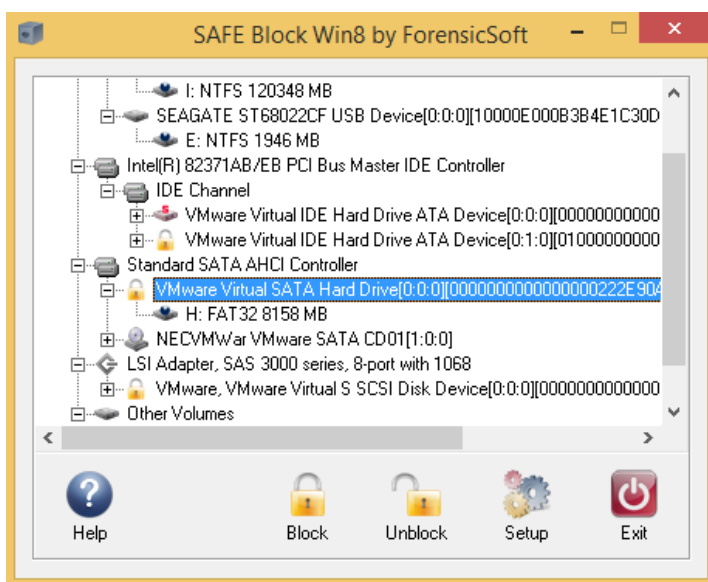
Figure 8

If a disk classified by Windows with a ‘Media Type’ of ‘External hard disk media’ or ‘Fixed hard disk media’ has not been “Remembered” by SAFE Block Win8-10, the device will be blocked or unblocked according to the default removable or fixed policy settings as shown in the following screenshot.

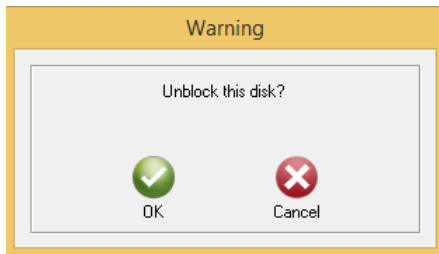


Manually Unblocking A Disk

To unblock a blocked disk, open the SAFE Block Win8-10 GUI and select the physical device in the GUI Device Tree. Once selected, click on the ‘Unblock’ button to unblock the disk.



You will be asked to confirm that you wish to unblock the selected disk.



Upon confirmation, the disk blocking process will start. During this process, any open Windows accessing this disk will be closed as the disk changes status.



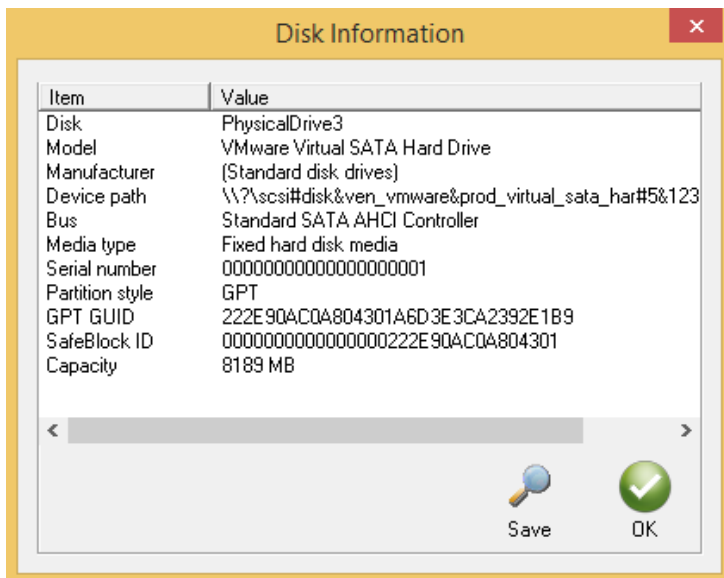
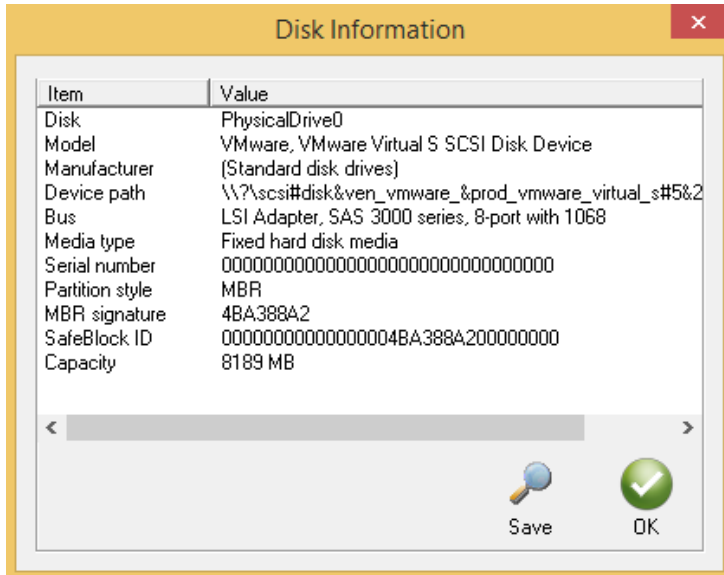
The disk will now be unblocked and writable.

Closing the GUI

The Exit button on the interface closes the SAFE Block Win8-10 GUI. The Windows 'X' box on the top right of the window does the same thing. Closing the SAFE Block Win8-10 GUI does not stop SAFE Block Win8-10 from blocking devices. The interface can be re-started from the taskbar tray icon, desktop icon, taskbar pinned icon or Apps screen. To stop SAFE Block Win8-10 from blocking you must uninstall it and reboot.

Disk Information

Disk Information about any physical device can be displayed by double-clicking on the physical device in the SAFE Block Win8-10 GUI Device Tree. This will open a separate dialog box containing the Disk Information, which includes the Model, Manufacturer, Device Path, Bus, Media Type, Serial Number, Partition Style, MBR or GPT Signature (depending on what partition style the disk is configured as), the SafeBlockID that SAFE Block uses to “Remember” disks and the disk capacity.

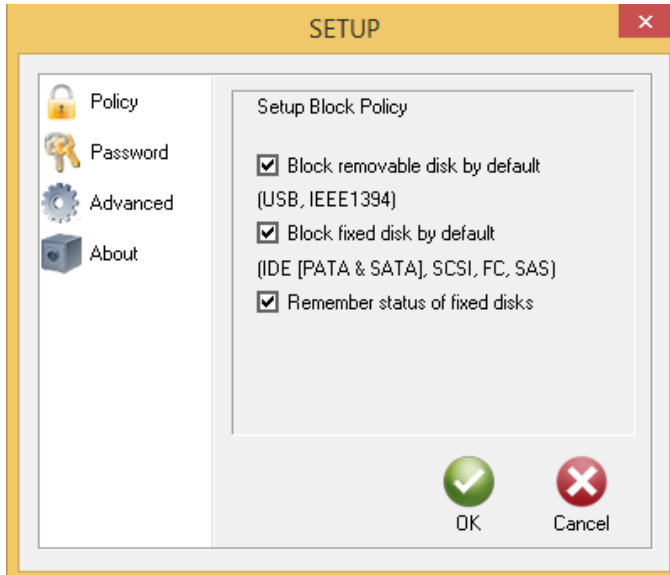


Clicking on the 'Save' button will allow you to save the Disk Information to a text file.

Setup



The Setup button on the main interface brings up this window:



The left pane of the dialog box allows selection of whether you want to change GUI password, change the default blocking policies, control advanced settings, or see information about SAFE Block Win8-10.

Default Blocking Policies

The figure above shows the default policy setup interface.

- **Block removable disk by default (USB, IEEE 1394)** - checking this box means that removable drives, such as USB thumb drives, USB card readers, flash media devices, and Firewire (IEEE 1394) devices will be write blocked by default both at boot time and when they are connected to a running system. This includes any hard drives (i.e. IDE, SATA, SCSI, etc.) attached via USB or IEEE 1394.
- **Block fixed disk by default (IDE [PATA & SATA], SCSI, FC, SAS)** - checking this box means SAFE Block Win8-10 will block all fixed disks (except the system disk, as well as any addition disk(s) from the local system that have been configured with a system pagefile.sys, which cannot be blocked) that are present when the system boots, as well as immediately upon detection of hot-swappable drives that are attached to a running system, such as SATA drives.
- **Remember status of fixed disks** - If this box is checked, (default) then SAFE Block Win8-10 will "Remember" the last blocked/unblocked status of all disks classified by Windows with a '**Media Type**' of '**External hard disk media**' or '**Fixed hard disk media**' that it has seen on the machine since SAFE Block Win8-10 was installed or the "Remember" list was last cleared. For instance, if you have a fixed disk installed that you always want unblocked, you can check this box, and

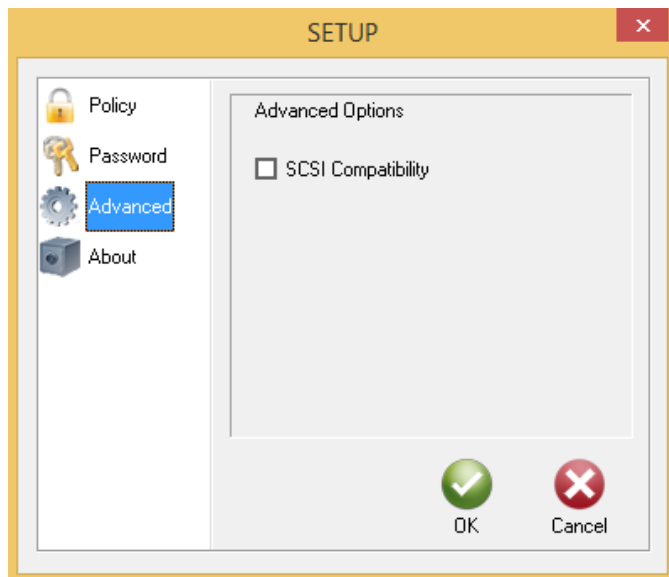
manually unblock the drive. The “remembered” drive will remain unblocked, even through system restarts, until (if) you choose to manually block it through SAFE Block Win8-10's interface. This policy overrides the default policies of the two check boxes above it. If a “remembered” device is connected to the system and this box is checked, then the device's last blocked/unblocked status will be used, regardless of the default policy in the previous two checkboxes. If the “Remember...” box is unchecked, then the former status of all returning devices is deleted and will not be remembered and the above two checkboxes set default policy.

Checking only the “Remember status of fixed disks” checkbox, SAFE Block Win8-10 will not block any new drives by default. This is not recommended for forensic purposes where you want to prevent Windows from writing to new disks before you can manually block them through the SAFE Block Win8-10 interface. For forensic purposes it is recommended to check the first two policy boxes so that Windows cannot write to any new device during startup and/or upon insertion of a new device.

Removable disks (e.g. USB and IEEE 1394) classified by Windows with a ‘**Media Type**’ of ‘**Removable Media**’ cannot have their status remembered. This will typically be the classification for standard USB thumb drives.

Advanced Settings

The Advanced Settings brings up this dialog box:



The single checkbox controls blocking of some esoteric low-level write commands.

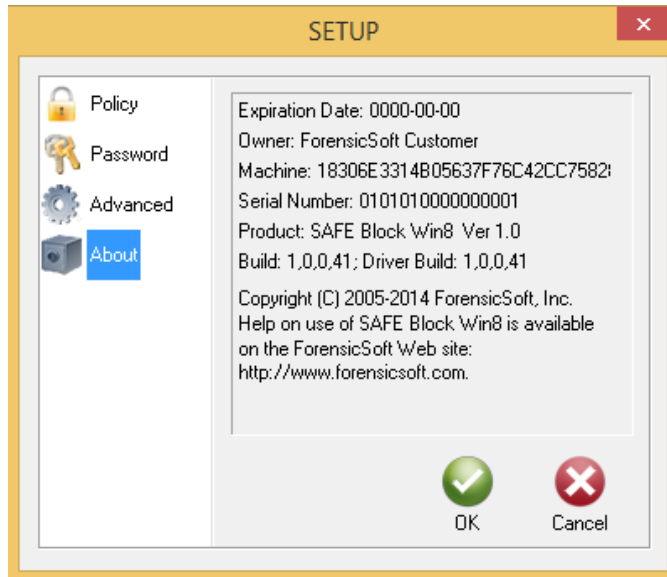
Unchecked (default) - in this mode SAFE Block Win8-10 will block all write commands to the disk, including some write commands that are highly unlikely to write to the disk and may cause some applications problems. For forensic purposes this conservative blocking is recommended.

Checked - in this mode the esoteric write commands will be allowed. This is highly unlikely to allow writes to the disk and may allow some applications to run that fail when conservative

blocking is used. It is recommended not to check this box unless absolutely necessary due to application errors accessing some SCSI disks.

Note that SAFE Block Win8-10 blocks the SCSI command Write Attributes. This command, if checked, is highly unlikely to write to the disk, but may write to the disk in some circumstances.

About SAFE Block Win8-10



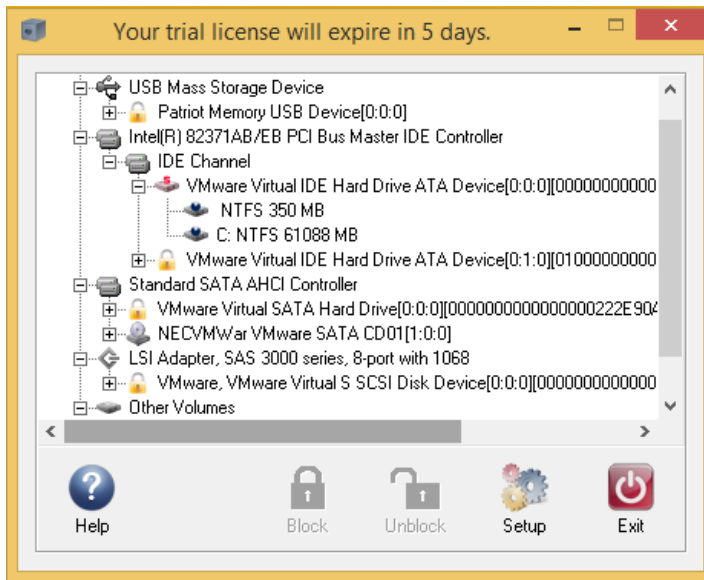
This 'About' dialog shows the information contained in your 'license.dat' license file as well as the Product Name, Version and Build Numbers of the software and SAFE Block Win8-10 driver.

Note: For Trial licenses, this screen will show you your trial license expiration date. For Full licenses, there is no expiration date since the product has a perpetual license.

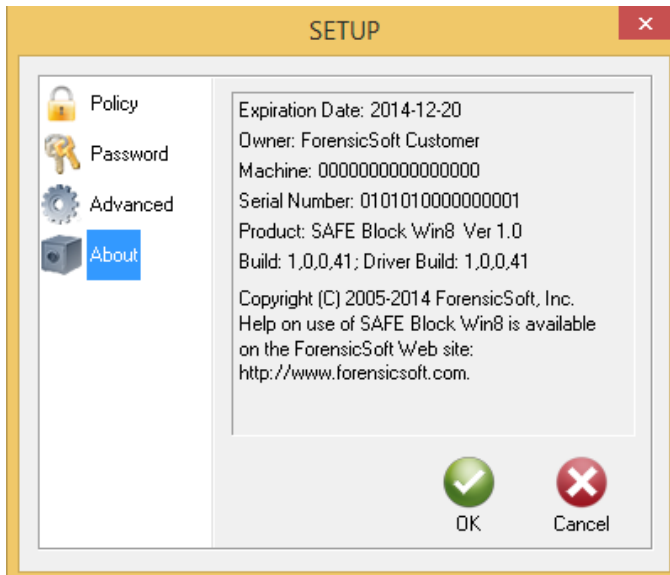
Expired or Invalid Licenses

Trial licenses are issued for a limited time frame and are not tied to a specific computer by way of a Machine ID. Therefore trial licenses allow you to test SAFE Block Win8-10 on as many computers as you need prior to purchase.

The Title Bar of the SAFE Block Win8-10 GUI will alert you as to how many days you have remaining before your trial license expires.



The Setup/About screen shows you your trial license expiration date.



If you attempt to open the SAFE Block Win8-10 GUI with an expired trial license, the following message (Figure 9) will appear telling you that you may not change policy settings, block or unblock disks, or otherwise interact with SAFE Block Win8-10 without a valid unexpired license.

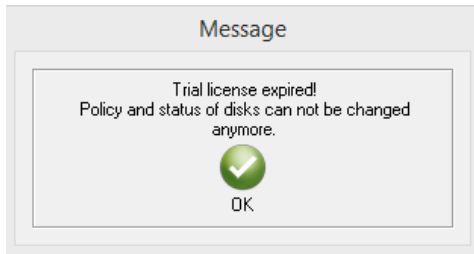
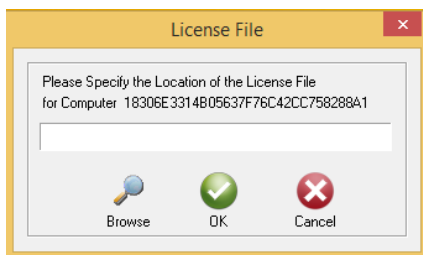


Figure 9

When a license is expired, you will be prompted to select a new license.dat that is unexpired or a permanent Full license. If you do not have an unexpired trial license or a full license then the SAFE Block Win8-10 GUI will not open.



In the event your license.dat file becomes corrupt or is missing, and you attempt to open the SAFE Block Win8-10 GUI, one of the below error messages will appear and you will be prompted to select a valid license.



Technical Support

Support information is available on the ForensicSoft web site:

<https://www.forensicsoft.com/support.php>

Frequently Asked Questions (FAQs) are available here:

<https://www.forensicsoft.com/fag.php>