# WipeDrive Home User Guide

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# IMPORTANT! PLEASE READ CAREFULLY:

Thank you for choosing WipeDrive Home.  Before running WipeDrive, please make sure that any files, folders, and any other information you wish to preserve is backed up on another media device (CD/DVD/EXT HD) and not attached.  WipeDrive will securely delete all information on the hard drive(s); the information will NOT be recoverable by any means including forensic recovery tools.

# General Information

- WipeDrive Home will not be able to access the drive's previously allocated drive letter (c: d: etc.). Details such as the drive size, serial number and manufacturer will be displayed in the drive selection menu to help identify individual drives.
- While wiping a hard drive on a laptop it is recommended that it remain plugged-in to a power source as the wiping process can take an extended amount of time and may lock the hard drive if the laptop loses power. (Factors such as hard drive size and wiping methods determine this amount of time.)

# WipeDrive

## OVERVIEW

When a Windows or Linux system saves a file, it does two things: it creates an entry for the file in the Master File Table, which functions as a sort of ‘table of contents’ for the drive, and it saves the file data itself onto sectors of the hard drive.  If a file is deleted using the Recycle Bin, the file is not actually deleted.  The file’s entry in the Master File Table is deleted, but the data itself still remains intact on the hard drive, while the space that it occupies is marked for use, letting the system know that the space is available for new files to be written to.  Unless new data is written to the space held by the deleted file, the original file still exists on the drive in its original state.

Any number of file recovery programs can easily look through the drive and find remnants of the file’s entry in the Master File Table and put the file back together, making it as if it was never deleted in the first place.  The only way to truly delete a file is to overwrite it with other information.

The primary purpose of WipeDrive is to securely overwrite all data to make any type of data recovery impossible in order to comply with all applicable corporate and government regulations.

## SYSTEM REQUIREMENTS

- All versions of DOS, Windows XP, Vista, 7, 8, 8.1, 10, OS/2, PC-based Linux, Unix and Intel-based Mac systems.
- Any type of hard drive (IDE, SCSI, SATA, SSD, NVMe).
- CD-ROM/DVD Drive
- 512 MB RAM

# Key Features

## SECURE REMOVAL OF HPA AND DCO

A host protected area, sometimes referred to as hidden protected area, is an area of a hard drive that is not normally visible to an operating system. A Device Configuration Overlay (DCO) is a hidden area on many of today's Hard Disk Drives (HDDs). Usually when information is stored in either the DCO or Host Protected Area (HPA), it is not accessible by the BIOS, OS, or the user.

As part of the wipe process WipeDrive securely removes and overwrites all data contained in HPA's and DCO's.

## SECURE ERASE OPTION

A modern hard drive comes with many spare sectors. When a sector is found to be bad by the firmware of a disk controller, the disk controller remaps the logical sector to a different physical sector.

The ANSI T-13 committee which oversees the Advanced Technology Attachment (ATA) (also known as IDE) interface specification and the ANSI T-10 committee which governs the Small Computer System Interface (SCSI) specification have incorporated into their standards a command feature known as Secure Erase (SE).  It completely erases all reallocated disk sectors (sectors that the drive no longer uses because they have hard errors in them).

WipeDrive uses the SE command as part of its United States Department of Defense 5220.22-M compliant (DoD 5220.22-M) wipe process, to ensure the removal of remapped drive sectors.

# WipeDrive Boot Via CD

## OVERVIEW

Running WipeDrive via CD is normally a good choice when the number of computers to be wiped are small as the CD must be inserted and booted on each system.

## BIOS SETTINGS

To run WipeDrive Home via CD insert the disk into the computer and check that the BIOS is set to first boot from the CD drive.  To change the boot sequence, access the BIOS of the computer during the initial start-up of the system.  When the computer first turns on/restarts a screen will flash with options to enter either 'Setup' or 'Boot,' as well as a key to press for each corresponding option. See table below for known BIOS keys based on system manufacturer.  The key must be pressed quickly, otherwise the computer will continue with its usual booting routine.

| Manufacturer | BIOS Key |
|---|---|
| Acer® | F1, F2, CTRL+ALT+ESC |
| Compaq® | F10 |
| Dell® | F2, DEL |
| eMachine® | DEL, F2 |
| Gateway® | F1, F2 |
| HP® | F1, F2, ESC |
| IBM® | F1 |
| Lenovo® | F1, F2 |
| Apple® | Hold down Option |
| Micron® | F1, F2, or DEL |
| Sony® | F2, F3 |
| Toshiba® | ESC, F1 |

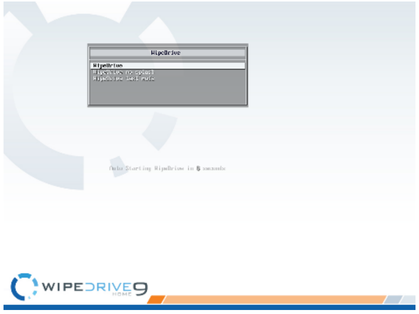
**NOTE:** If your particular computer or manufacturer is not displayed, the BIOS keys are normally either DEL or F2.

# Wipe Process via CD

## Step 1

Insert WipeDrive into the CD-ROM drive and restart the computer.

The computer will then display the loading screen.



WipeDrive
WipeDrive
WipeDrive no splash
WipeDrive text mode

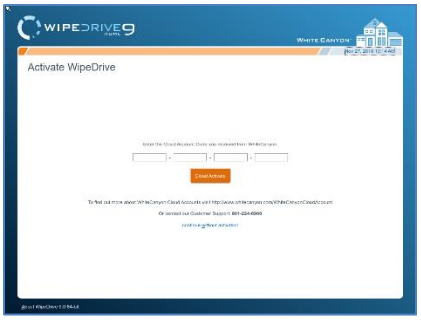
Auto Starting WipeDrive in 6 seconds

## Step 2

WipeDrive will now ask for your Cloud Activation Code.

If you have a Cloud Activation Code, enter it in the 4 boxes now then press '**Use Cloud'**. Your code can be found either in the email with your download links or on the paper invoice you received with the CD.

If you do not have a wired internet connection, select '**Continue with Offline Activation**'.



Activate WipeDrive

Enter the Cloud Account Code you received from WhiteCanyon

[ ] - [ ] - [ ] - [ ]

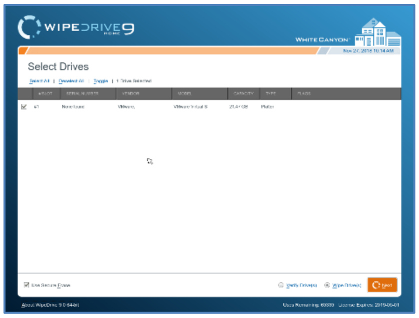
To find out more about WhiteCanyon Cloud Accounts visit http://www.whitecanyon.com/WhiteCanyonCloudAccount

Or contact our Customer Support 801-224-8900

## Step 3

WipeDrive will now display all attached hard drives. Please select the drives you wish to securely erase.

Select '**Next'** to continue.



Select Drives

Select All | Deselect All | Toggle | 1 Drive Selected

|  | #/SLOT | SERIAL NUMBER | VENDOR | MODEL | CAPACITY | TYPE | FLAGS |
|---|---|---|---|---|---|---|---|
| ☑ | #1 | None found | VMware, | VMware Virtual S | 21.47 GB | Platter |  |

☑ Use Secure Erase

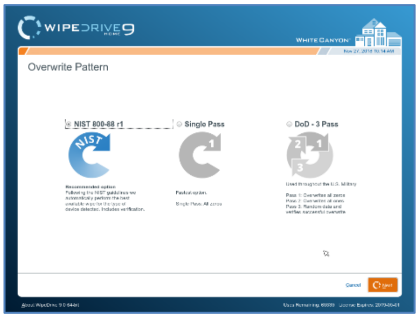
○ Verify Drive(s) ● Wipe Drive(s)

Uses Remaining: 99999 License Expires: 2019-06-01

## Step 4

The overwrite pattern can be changed on this screen. WhiteCanyon recommends either the NIST 800-88 r1 or the Singe Pass.

Select '**Next'** to continue.



Overwrite Pattern

● NIST 800-88 r1

Recommended option
Following the NIST guidelines we automatically perform the best available wipe for the type of device detected. Includes verification.

○ Single Pass

Fastest option.

Single Pass: All zeros

○ DoD - 3 Pass

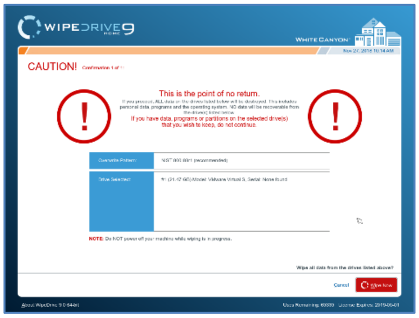
Used throughout the U.S. Military

Pass 1: Overwrites all zeros
Pass 2: Overwrites all ones
Pass 3: Random data and verifies successful overwrite

Uses Remaining: 99999 License Expires: 2019-06-01

## Step 5

WipeDrive will warn that this process is irreversible. Select **'Wipe Now'** to continue or cancel to return to the previous screen.


WIPEDRIVE 9 HOME
WHITE CANYON
Nov 27, 2018 10:14 AM
Cancel
Wipe Now
About WipeDrive 9.0 64-bit
Uses Remaining: 65535   License Expires: 2019-06-01

CAUTION! Confirmation 1 of 1

This is the point of no return.

If you proceed, ALL data on the drives listed below will be destroyed. This includes personal data, programs and the operating system. NO data will be recoverable from the drive(s) listed below.

If you have data, programs or partitions on the selected drive(s) that you wish to keep, do not continue.

| | |
|---|---|
| Overwrite Pattern: | NIST 800-88r1 (recommended) |
| Drive Selected: | #1 (21.47 GB) Model: VMware Virtual S, Serial: None found |

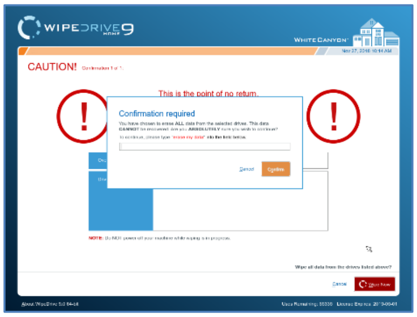
NOTE: Do NOT power off your machine while wiping is in progress.

Wipe all data from the drives listed above?

## Step 6

WipeDrive will warn you that everything will wiped. You must type "erase my data" in order to continue. Once you have typed in that message, select '**Confirm'.**

**Warning**: confirming the wipe will permanently delete ALL data from hard drives and other media. Personal data, programs, and the operating system will all be removed. No data will be recoverable from the drives after WipeDrive has deleted the data.


WIPEDRIVE 9 HOME
WHITE CANYON
Nov 27, 2018 10:14 AM
CAUTION! Confirmation 1 of 1
This is the point of no return.
Cancel
Confirm
Cancel
Wipe Now
About WipeDrive 9.0 64-bit
Uses Remaining: 65535   License Expires: 2019-06-01

Confirmation required

You have chosen to erase ALL data from the selected drives. This data CANNOT be recovered. Are you ABSOLUTELY sure you wish to continue?

To continue, please type "erase my data" into the field below.

NOTE: Do NOT power off your machine while wiping is in progress.

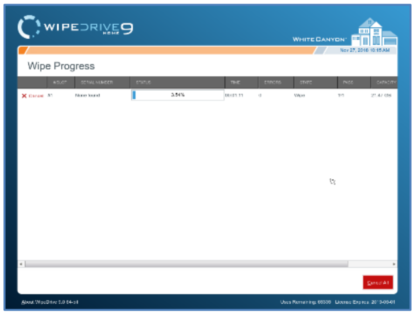
Wipe all data from the drives listed above?

## Step 7

WipeDrive will now begin wiping the hard drive.

**Warning**: If you cancel the wipe before completion there may still be recoverable data left on the drive.

**Warning**: Do not power off the system while a firmware-based wipe (e.g. Secure Erase, Sanitize Device, etc.) is taking place. Doing so may put the drive in a bad state.


WIPEDRIVE 9 HOME
WHITE CANYON
Nov 27, 2018 10:15 AM
Cancel All
About WipeDrive 9.0 64-bit
Uses Remaining: 65535   License Expires: 2019-06-01

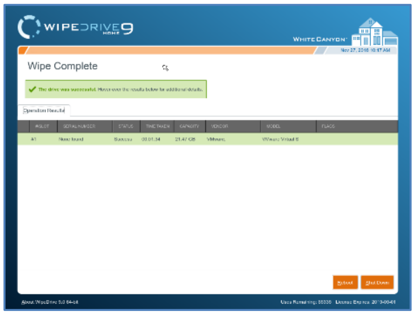
Wipe Progress

| | #SLOT | SERIAL NUMBER | STATUS | TIME | ERRORS | STATE | PASS | CAPACITY |
|---|---|---|---|---|---|---|---|---|
| ✕ Cancel | #1 | None found | 3.54% | 00:01:11 | 0 | Wipe | 1/1 | 21.47 GB |

## Step 8

When the process is completed, WipeDrive will display the Wiping Results screen.

Click **'Reboot'** or **'Shut Down'** to exit WipeDrive.



Wipe Complete

✓ The drive was successful. Hover over the results below for additional details.

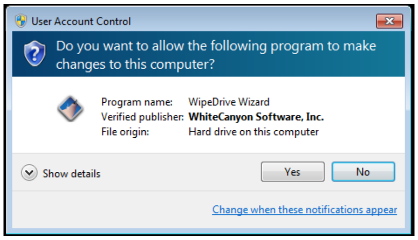
| | #SLOT | SERIAL NUMBER | STATUS | TIME TAKEN | CAPACITY | VENDOR | MODEL | FLAGS |
|---|---|---|---|---|---|---|---|---|
| | #1 | None found | Success | 00:01:34 | 21.47 GB | VMware, | VMware Virtual S | |

# Wipe Process Via .EXE

## Step 1

Download WipeDrive to the desktop.
Please double click and run WipeDrive.

## Step 2

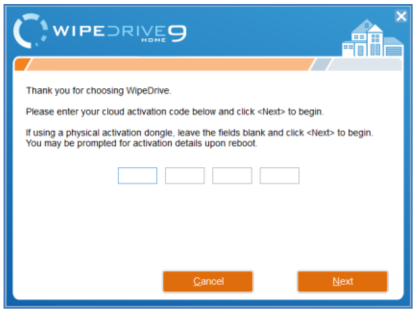


Do you want to allow the following program to make changes to this computer?

Program name: WipeDrive Wizard
Verified publisher: **WhiteCanyon Software, Inc.**
File origin: Hard drive on this computer

Windows will now ask if you would like to run this program. Please select '**Yes**'.

## Step 3



Thank you for choosing WipeDrive.

Please enter your cloud activation code below and click <Next> to begin.

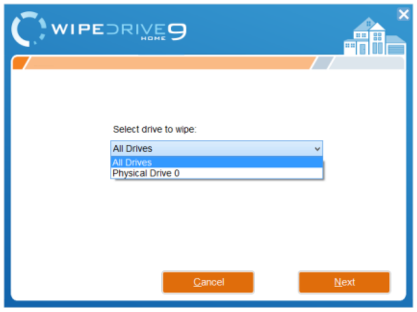
If using a physical activation dongle, leave the fields blank and click <Next> to begin.
You may be prompted for activation details upon reboot.

WipeDrive will now ask for your Cloud Activation Code.

If you have a Cloud Activation Code, enter it in the 4 boxes now then press enter. Your code can be found either in the email with your download links or on the paper invoice you received with the CD.

An activation code must be entered in order to continue.

## Step 4



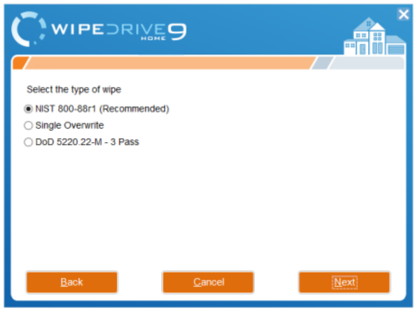
Select drive to wipe: All Drives

Click on the drop down list to select which drive to wipe. There are only two options when selecting hard drives to be wiped, 'All Drives' or a single individual drive.

After selecting a drive click **'Next'** to continue.

## Step 5

At the Wipe Selection menu, select the required wipe and select '**Next**'.

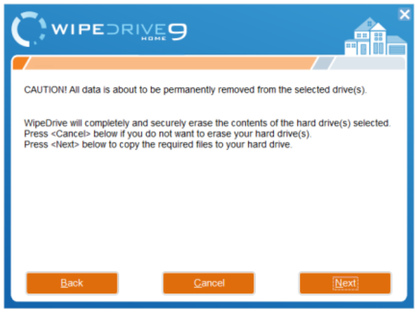


Select the type of wipe

● NIST 800-88r1 (Recommended)
○ Single Overwrite
○ DoD 5220.22-M - 3 Pass

## Step 6

WipeDrive will now verify that you wish to securely overwrite the hard drive(s). Select '**Next'** to continue.



CAUTION! All data is about to be permanently removed from the selected drive(s).

WipeDrive will completely and securely erase the contents of the hard drive(s) selected.
Press <Cancel> below if you do not want to erase your hard drive(s).
Press <Next> below to copy the required files to your hard drive.

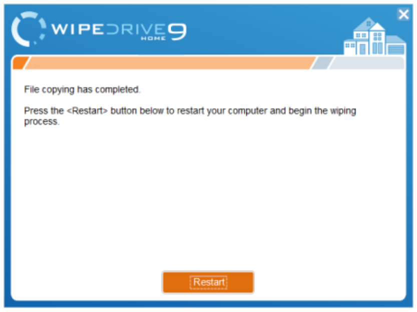
## Step 7

Before beginning the wiping process WipeDrive will first install the required files.

## Step 8

In order to overwrite the entire hard drive WipeDrive runs outside of Windows within a Linux kernel. For this to happen the computer must restart and boot into the WipeDrive program.

Click '**Restart**' to begin this process.



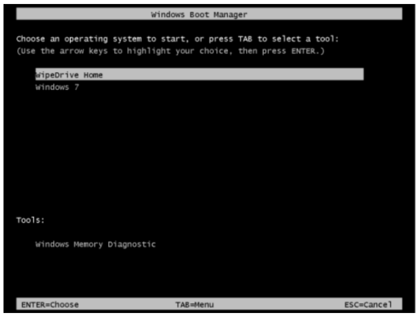
File copying has completed.

Press the <Restart> button below to restart your computer and begin the wiping process.

## Step 9

Once the computer restarts you will see a 'Boot Manager' window. Make sure to select WipeDrive Home otherwise the computer will boot back into Windows.

Press **'Enter'** to continue.



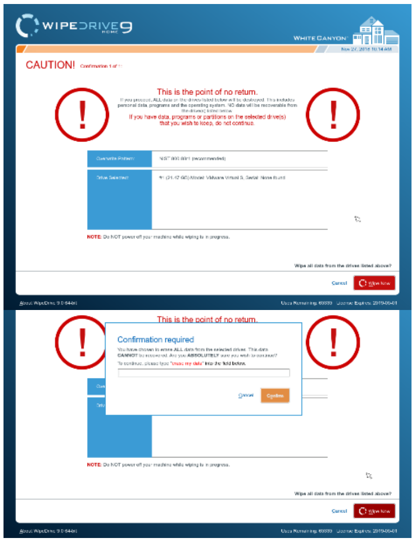
```
                        Windows Boot Manager

Choose an operating system to start, or press TAB to select a tool:
(Use the arrow keys to highlight your choice, then press ENTER.)

    WipeDrive Home
    Windows 7



Tools:

    Windows Memory Diagnostic


 ENTER=Choose                  TAB=Menu                      ESC=Cancel
```

### Step 10

WipeDrive will warn that this process is irreversible. Select **'Wipe Now'** to continue or cancel to return to the previous screen.

### Step 11

WipeDrive will warn you that everything will wiped. You must type "erase my data" in order to continue. Once you have typed in that message, select '**Confirm'.**



CAUTION! Confirmation 1 of 1

This is the point of no return.

If you proceed, ALL data on the drives listed below will be destroyed. This includes personal data, programs and the operating system. NO data will be recoverable from the drive(s) listed below.

If you have data, programs or partitions on the selected drive(s) that you wish to keep, do not continue.

| | |
|---|---|
| Overwrite Pattern: | NIST 800-88r1 (recommended) |
| Drive Selected: | #1 (21.47 GB) Model: VMware Virtual S, Serial: None found |

NOTE: Do NOT power off your machine while wiping is in progress.

Wipe all data from the drives listed above?

Confirmation required

You have chosen to erase ALL data from the selected drives. This data CANNOT be recovered. Are you ABSOLUTELY sure you wish to continue?

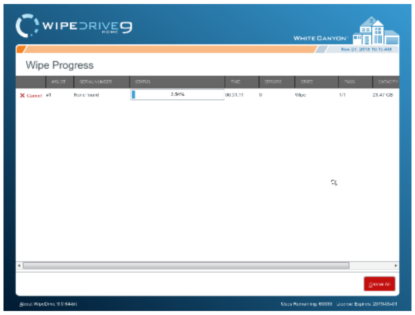
To continue, please type "erase my data" into the field below.

Cancel
Confirm
Cancel
Wipe Now
About WipeDrive 9.0 64-bit
Uses Remaining: 69999 License Expires: 2019-06-01

### Step 11

At this point WipeDrive will immediately begin wiping the drive(s) selected during setup.

This screen will provide some useful information such as 'Time Remaining' and if any disk errors are detected.



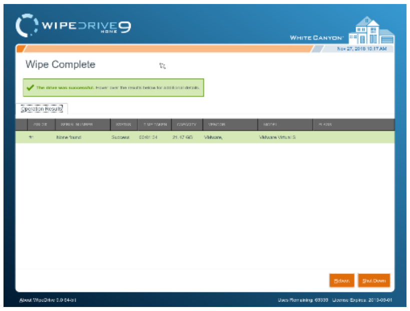
Wipe Progress

| | #SLOT | SERIAL NUMBER | STATUS | TIME | ERRORS | STATE | PASS | CAPACITY |
|---|---|---|---|---|---|---|---|---|
| ✕ Cancel | #1 | None found | 3.54% | 00:01:11 | 0 | Wipe | 1/1 | 21.47 GB |

### Step 12

After WipeDrive finishes it will display a screen stating whether or not the hard drive was successfully overwritten.

This concludes the WipeDrive process, you can now click either '**Reboot**' to restart the computer and reinstall an operating system or choose '**Shut Down**' to turn the computer off.



Wipe Complete

✓ The drive was successful. Hover over the results below for additional details.

Operation Results

| | #SLOT | SERIAL NUMBER | STATUS | TIME TAKEN | CAPACITY | VENDOR | MODEL | FLAGS |
|---|---|---|---|---|---|---|---|---|
| | #1 | None found | Success | 00:01:24 | 21.47 GB | VMware, | VMware Virtual S | |

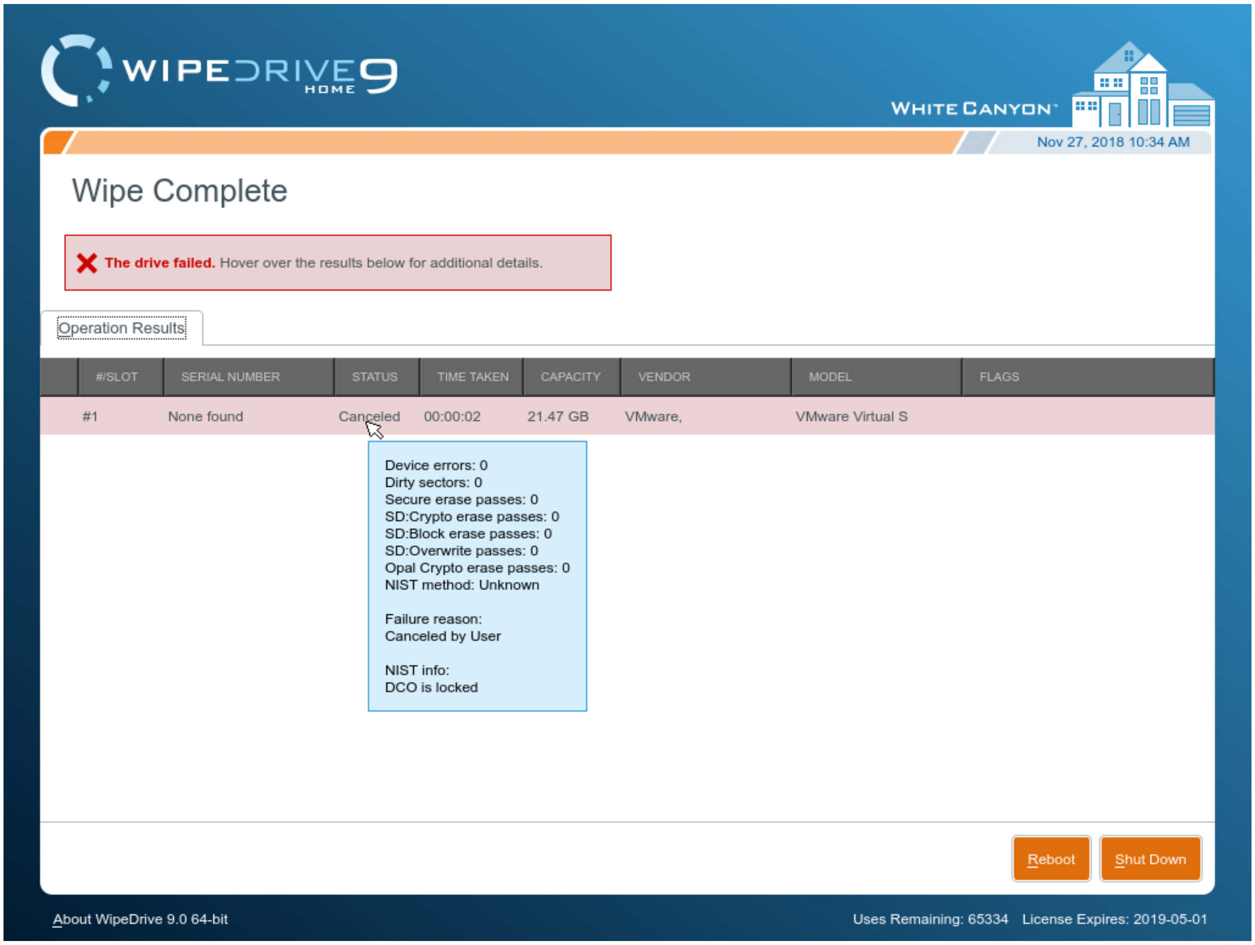
# Addendum 1 – Wipe Failure/Cancel

If a drive fails or is canceled, you can hover over the 'Status' column where it says 'Failed' or 'Canceled' and you will be presented with a drop-down that provides additional failure information about that drive.

**Information Provided:**

- Device Errors
- Dirty Sectors
- E. Secure Erase Passes
- SD: Crypto erase passes
- SD: Block erase passes

- SD: Overwrite passes
- Opal Crypto erase passes
- NIST method
- Failure reason
- Nist Info



Nov 27, 2018 10:34 AM

Wipe Complete

**The drive failed.** Hover over the results below for additional details.

| | #/SLOT | SERIAL NUMBER | STATUS | TIME TAKEN | CAPACITY | VENDOR | MODEL | FLAGS |
|---|---|---|---|---|---|---|---|---|
| | #1 | None found | Canceled | 00:00:02 | 21.47 GB | VMware, | VMware Virtual S | |

Device errors: 0
Dirty sectors: 0
Secure erase passes: 0
SD:Crypto erase passes: 0
SD:Block erase passes: 0
SD:Overwrite passes: 0
Opal Crypto erase passes: 0
NIST method: Unknown

Failure reason:
Canceled by User

NIST info:
DCO is locked

About WipeDrive 9.0 64-bit

Uses Remaining: 65334 License Expires: 2019-05-01

# Addendum 2 – NIST 800-88r1

NIST 800-88r1 is one of many standards that is put out by NIST. WipeDrive 9 implements these standards for HDD and SSD ATA drives, SCSI drives, and NVMe drives. There are 3 different wiping characterizations:

**Purge –**

- Applies physical or logical techniques to sanitize data and renders data recovery infeasible using forensic techniques.
- Purge can only be reached if the hard-drive supports firmware commands (Sanitize Device, Enhanced Secure Erase, etc.).

**Clear –**

- Applies logical techniques to sanitize data for protection against non-invasive data recovery techniques.
- Drives attached via USB are required to be overwritten twice in order to meet the “Clear” standard.
- If an SSD can’t successfully perform a firmware command, WipeDrive will then perform a version of the “SSD Smart Pass” and the drive will pass as a “Clear”.

**Unknown –**

- Didn’t meet the “Clear” or “Purge” level for one of the following reasons:
  - The wipe(s) weren’t verified properly
  - The media type isn’t handled by the code

NIST 800-88r1 requires a minimum of 10% verification across the entire drive. If you have chosen this overwrite pattern, a verification will be performed at the end of the wipe.

**Please Note:**

Not all firmware commands result in a “Purge” level. For instance, using Secure Erase should result in a “Clear” for an SSD, but should result in a “Purge” for an HDD.

HAMR and Hybrid drives are not currently NIST 800-88r1 compliant.

# Addendum 3 – Common Problems

## ACTIVATION SCREEN

If the cloud account code is invalid, an error message indicating the problem will be displayed to the user. If the account is expired, or if the account no longer has enough licenses, contact support.

## “SELECT DRIVES” SCREEN

If the "Next" button is selected but no drives are selected for wiping, a dialog saying "Please select one or more drives to continue" will appear. In order to continue, close the dialog by clicking "OK", and select at least one drive to be wiped.

## OPTIONS SCREEN

When the "Accept Settings" button is selected, if invalid entries are detected a dialog will appear indicating what error was detected. The indicated problem must be fixed before the selected options can be saved. Alternatively, if an error is indicated, selecting "Cancel" will exit the options screen without saving the changes.