User's Guide



Phoenix Winphlash64

Version 1.0

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Chapter 1

Introduction

The Phoenix Winphlash64 utility can flash the system BIOS on a 64-bit Windows environment by using DXE drivers. These DXE drivers include the Flash device driver, the chipset driver, and the platform driver. Refer to the Winphlash64 technology reference for more information about how to port these DXE drivers.

This chapter also details the conventions used in this manual.

The following table describes the features of the Winphlash64 program.

Table 1-1: Winphlash64 features

File name	Description	Operating System	Uses PHLASH.INI	Crisis Recovery	Command Line Mode
WINPHLASH64.EXE	32-bit application for 64-bit Windows	64-bit Windows XP/Server 2003/Vista	Yes	No	Yes

Required Software

You need the following software to best use Winphlash64 DXE driver:

- Windows Visual Studio 2005™ or later

Intended Audience

This product and manual are designed for OEMs and ODMs who want to build drivers that can flash the system BIOS on a 64-bit Windows environment using Phoenix Winphlash 64. You can install Winphlash 64 on a variety of systems, including desktop, notebook, or tablet PCs, embedded computers, point of sales (POS) machines, servers, and connected digital devices.

Conventions Used in This Manual

This document uses the following typographic conventions:

Bold	Indicates text you must enter or select, such as menu items, buttons, and commands
Italics	Indicates emphasis or paths you select
`Courier New`	Represents filenames or code
	Warns about possible loss of data and equipment damage

Chapter 2

Using Winphlash64

Phoenix Winphlash64 works with a 64-bit Windows operating system (OS) to back up, restore, or update the BIOS/Core System Software (CSS) on a flash device. Winphlash64 is a .ZIP file package. You must use a decompression utility (such as WinZip) to open the file. The utility can run from either a 64-bit Windows or 64-bit Windows' command shell interface.

Starting Winphlash64

You can start Winphlash64 from Windows or DOS prompt.

Starting from Windows

1. Close all other programs
2. Double-click the Winphlash64 desktop icon. The main screen displays and you see the Windows interface.

Starting from a DOS Prompt

1. Close all other programs.
2. From the Windows *Start* menu, select **Run**.
3. Type the complete path to the Winphlash64 executable file. For example, C:\Program Files\Winphlash64\Winphlash64.EXE
4. Press **Enter**. The main screen displays and you can see the DOS interface.

Using the Windows Graphical User Interface

Phoenix Winphlash64 has a Windows-based graphical user interface (GUI) that makes BIOS/CSS backups and upgrades (flashing) simple to configure and execute.

Backing Up and Updating BIOS

To back up and update your BIOS/CSS using the Windows GUI:

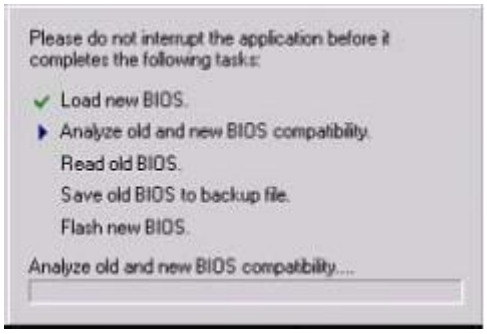
1. Close all other programs.
2. Double-click the Winphlash64 desktop icon. The main screen displays.
3. From the main screen, select the Winphlash64 operation you want to run.
4. Enter the path and file name of both the existing BIOS/CSS and the new BIOS/CSS files.
5. Click **Backup BIOS** and **Flash New Image with Settings**. A dialog box asks you to Continue or Cancel.

a. Click **Cancel** to prevent the backup from proceeding.

b. The main screen remains active until you either proceed with a backup and update BIOS procedure or exit the utility.

6. Click **Continue** to start your operation procedure.

A progress meter shows you the status of the procedure.



Do not interrupt the utility before it completes the tasks.

If you are backing up and upgrading (flashing) your BIOS/CSS, the utility displays a dialog box announcing the system reboot.

7. If you do not want to restart the system yet, click **Cancel**. The Restart operation terminates and the main screen displays.

You need to reboot to get the features of the newly programmed BIOS/CSS to work.

8. Click **Restart**, or wait for the utility to reboot your computer.



If your system does not shut down automatically, reboot your system by clicking the system's *Reset* button or by turning the power switch off and on.

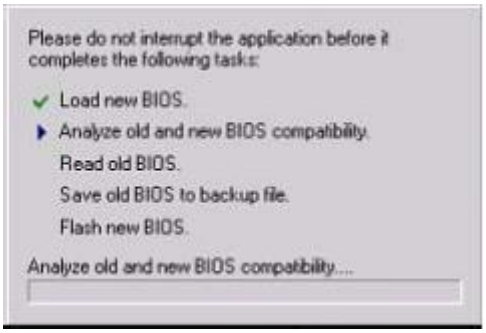
Using Basic Backup

To backup your BIOS/CSS using the Windows GUI:

1. Close all other programs.

2. Double-click the Winphlash64 desktop icon. The main screen displays.
3. From the main screen, select the Winphlash64 option you want to run.
4. Enter the path and file name of both the existing BIOS/CSS and the new BIOS/CSS files.
5. Click **Backup BIOS**. A dialog box asks you to Continue or Cancel.
   a. Click **Cancel** to prevent the backup from proceeding.
   b. The main screen remains active until you either proceed with a backup procedure or exit the utility.
6. Click **Continue** to start the backup procedure.

   A progress meter shows you the status of the backup procedure.



   Do not interrupt the utility before it completes the tasks.

   If you are backing up your BIOS/CSS, but not upgrading (flashing), the utility displays a message box that confirms the backup.
7. If you do not want to restart the system yet, click **Cancel**. The **Restart** operation terminates and the main screen displays.

   You must reboot to get the features of the newly programmed BIOS/CSS to work.
8. Click **Restart**, or wait for the utility to reboot your computer.



If your system does not shut down automatically, reboot your system by clicking the system's **Reset** button or by turning the power switch off and on.

Using the Main Screen

Use the Phoenix Winphlash64 main screen to specify your BIOS/CSS backup and flash settings and to run your backup and flashing procedures.

You also use the main screen to access the **Advanced Settings** button and the resulting **Options** screens.

All the elements in the main GUI have been defined as Secure Winphlash. Refer to Secure Winphlash relative documents.

Using Advanced Settings Button

The **Advanced Settings** button is located to the right of the **Operations** section. This button allows you to access the **Options** dialog, where you can set flags and edit DMI strings.

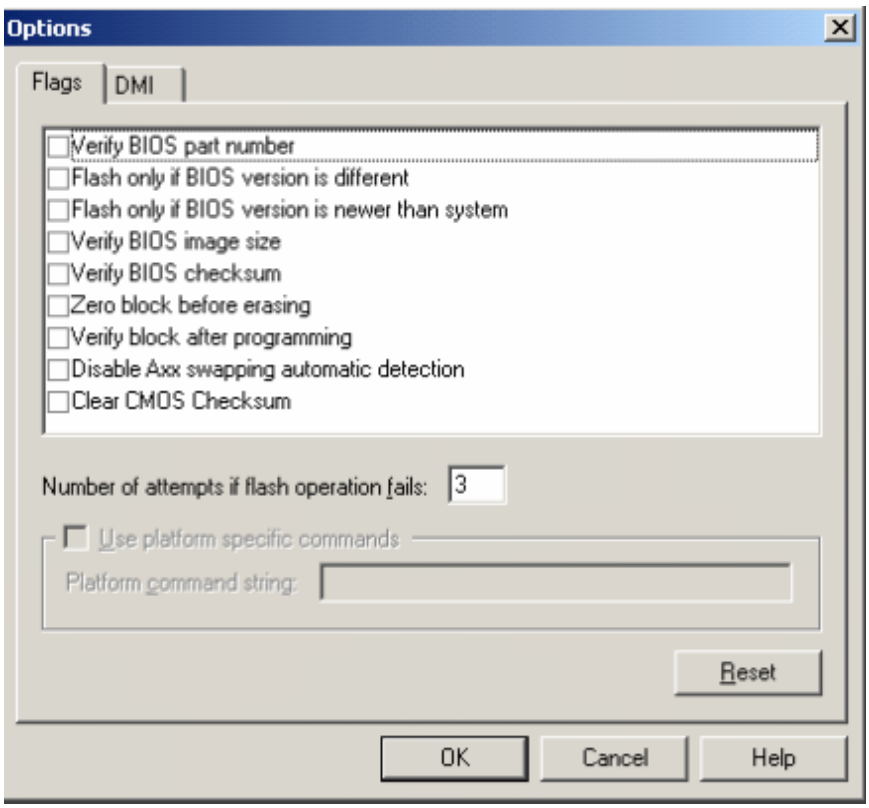
If the **Advanced Settings** button does not display:

1. Open FLASH.INI file and set Advanced=1 in [UI] section.
2. The main screen opens, including the **Advanced Settings** button to the right of the **Winphlash Operations** section.
3. On the main screen, click **Advanced Settings**. The Options dialog box displays.

Setting the Flags Tab

To set or disable flags:

Click **Advanced Settings**. The **Options** dialog displays. The **Flags** tab is the default view.

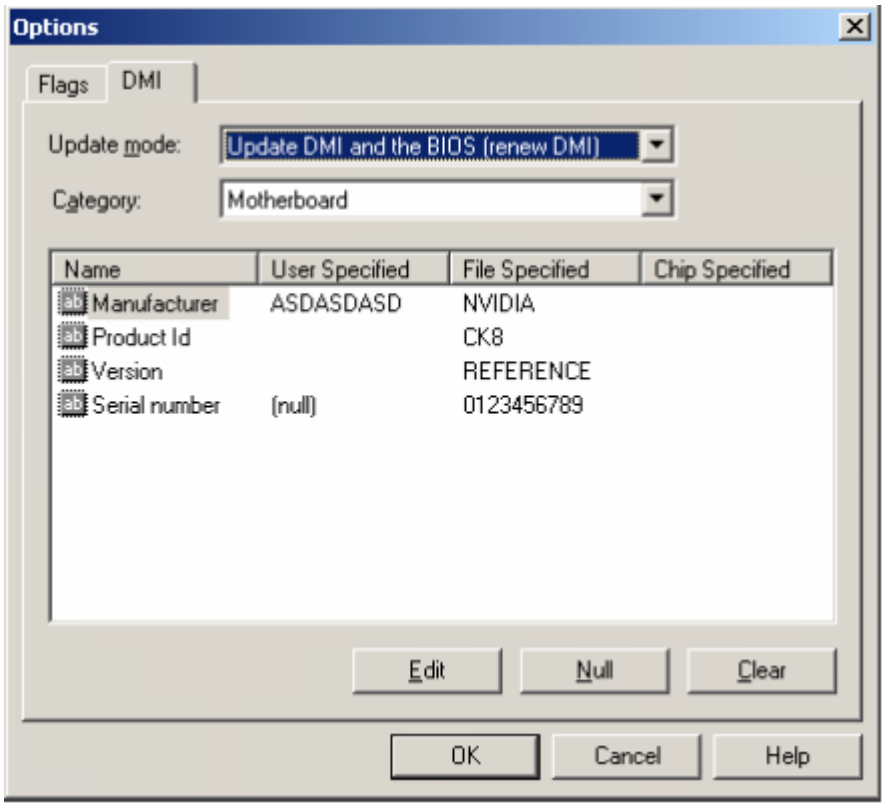


All the elements on this page are defined as Secure Winphlash. Refer to Secure Winphlash related documents for more information.

Using the DMI Tab

The *Advanced Settings* > *Options* > *DMI* tab displays the DMI strings from FLASH.INI, the BIOS/CSS image file (*.WPH), and the settings that are programmed in the current chip.

Use the DMI tab to change the DMI strings that you want written to the chip.



All the elements in this page have been defined as Secure Winphlash. Refer to Secure Winphlash related documentation.

Using the DOS Interface

You can configure and use Phoenix Winphlash64 with the DOS interface. If you do not thoroughly understand DOS command syntax, do not use this interface; use the Windows interface instead.

Using the DOS Interface for Basic Backup

To backup your BIOS/CSS using the DOS interface:

1. Close all other programs.
2. From the 64 bit Windows *Start* menu, select **Run**.
3. Type the complete path to the Winphlash64 executable file. For example: C:\Program Files\Winphlash64\ Winphlash64.EXE
4. Press **Enter**. The main screen displays.

   When running as a DOS utility, Winphlash64 does not use a response file, but uses the settings and options specified in FLASH.INI to perform the backup and update functions.

Using DOS Commands and Syntax

You can override the FLASH.INI settings by issuing DOS commands for:

- Backing up the existing BIOS/CSS before flashing
- Verifying the BIOS/CSS number before flashing
- Reading the existing flash module in the chip and saving the flash module information to a file without flashing
- Flashing the BIOS/CSS only if the image file (*.WPH) contains a BIOS/CSS image newer than the BIOS/CSS on the existing chip.
- Flashing a new BIOS/CSS to your system
- Verifying the new BIOS/CSS checksum
- Minimizing messages and delays
- Disabling *Axx* auto detection

Table 4.1: Winphlash and WinPE flash options syntax-Winphlash [Options] [ROMfile]

Option	**Description**
ROMfile	Override the default BIOS/CSS image name BIOS.WPH with \"file\"
/BBL	Program boot block
/BU[=name]	Backup flash memory into BIOS.BAK before programming. If "name" specified, override the default filename BIOS.BAK
/C	Clear CMOS checksum after programming
/CS	Verify BIOS.WPH image checksum
/DMC:string	Specify chassis manufacturer DMI string
/DMM:string	Specify motherboard manufacturer DMI string
/DMS:string	Specify system manufacturer DMI string
/DOxx:string	Specify OEM DMI string number xx
/DPC:string	Specify chassis product ID DMI string
/DPM:string	Specify motherboard product ID DMI string
/DPS:string	Specify system product ID DMI string
/DSC:string	Specify chassis serial number DMI string
/DSM:string	Specify motherboard serial number DMI string
/DSS:string	Specify system serial number DMI string
/DUS:string	Specify UUID DMI string
/DVC:string	Specify chassis version DMI string
/DVM:string	Specify motherboard version DMI string

Option	Description
/DVS:string	Specifies the system version DMI string
/MFG	Manufacturing mode - Automatically reboots without a key click
/MODE=n	Specifies how to update the DMI strings. Mode *n* (0, 1, 2,3)
/N	Program only if BIOS.WPH is different than the system BIOS/CSS
/NOB	Do not allow an older BIOS/CSS flashed to the platform
/P	Production mode (minimize messages and delays)
/PN	Program only if the same BIOS/CSS part number
/REMOTE2	Other applications or other computers call for Secure Winphlash
/RO[=name]	Read contents of flash part and save to a file without flashing
/R=n	Retry flashing a block n times if flash fails
/S	Disables the **Start Screen**. Overrides StartScreen=1 in the FLASH.INI file; the **Start Dialog** does not display even though the INI file contains the line StartScreen=1
/SWAP=NO	Disable *Axx* autodetection

Using FLASH.INI

Winphlash64 also uses the FLASH.INI file as Secure Winphlash to display its UI, and to locate BIOS/CSS and DMI string settings that override those set in the new BIOS/ CSS file (*.WPH).

All parameters are defined as the Secure Winphlash Phlash.ini file. Refer to Secure Winphlash related documentation.

Getting Winphlash64 Error Messages

All parameters are defined as the Secure Winphlash Phlash.ini file. Refer to Secure Winphlash related documentation for more information.

Building the Winphlash64 Utility

To build the Winphlash64 utility:

1. Install the Microsoft Visual C++ integration development environment.
2. Install the Windows Server 2003 64 Bit DDK or Windows XP 64 Bit DDK using the default setting, for example, to d:\WINDDK.

3. Copy the whole PHLASHSYS directory in the release source code of Winphlash64 tool to the D:\WINDDK\3790\src\drivers.
4. Select the *start>programs>Development Kits > Windows DDK 3790>Windows Server 2003>Windows Server 2003* checked AMD64 bit build environment.
5. After the D:\WINDDK\3790 prompt appears, enter the ll.bat command to build the driver.

   The PhlashNT.sys should generate in the *D:\WINDDK\3790\src\drivers\PhlashSys\bin\amd64*.
6. The PhlashNt.sys is digitally signed for the Vista requirement.
7. In the release source code of Winphlash64 tools, there are two workspace files: phlashui.dsw and phlashlc.dsw. Open them in Visual C++ 6.0 or later, and build them. The PhlashLc.dll and Winphlash64.exe generate.
8. Copy the phlashnt.sys and phlashLc.dll and Winphlash.exe together, as well as the other three DLL files in the source code package:
   - mfc42.dll
   - msvcp60.dll
   - msvcrt.dll

The WINPHLASH.HLP file generates by the help utility and does not always require updating.

All parameters define as the Secure Winphlash Phlash.ini file. Refer to Secure Winphlash related documentation for more details.

For Benton architecture BIOS, Winphlash64 supports settings from the flashint.bin instead of using "/escd /vuv /vsv", named PSIFLAG2, defined as following:

```
PSIFLAG2_ESCD     EQU    02h     ;updates ESCD from bios image
PSIFLAG2_VSV      EQU    04h     ;updates setup variable volume
PSIFLAG2_VUV      EQU    08h     ;update ufei variable volume from bios image
PSIFLAG2 LABEL BYTE
    DB    "PSIFLAG2"
    DD    16
    DD    PSIFLAG2_ESCD + PSIFLAG2_VSV + PSIFLAG2_VUV
```

Using Winphlash with Vista

Modify CApp::OnHelp( ) by using WinExec() for VISTA OS.

1. When running Winphlash64 on Vista64, right-click and select “Run as administrator”. Another way is to run msconfig.exe > *Tools* > *Disable UAP*

under Vista64 and restart the OS. Using this way you can run Winphlash64 as you run it under WinXP64.

2. When running Winphlash64 on Vista64, disable the driver signature enforcement by press the F8 key during OS boot and select disable driver signature enforcement.

Being Aware of Certain Winphlash64 Limitations

Flash2000 frame is not fit for Winphlash64. For more information about how to port DXE drivers, refer to the Winphlash64 technical reference.