Aptio* V Integrator Tool - iCHLogo

User Guide

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Revision History

Date	Revision	Description
December 2019	1.0	Initial release.
May 2020	2.0	Additional command line examples.
September 2020	3.0	Removed Python requirement for UEFI
January 2021	4.0	Added Tiger Lake support
January 2024	5.0	Asus rebrand update
November 2024	5.1	Easy batch support

1.0 Introduction

ASUS® Aptio* V Integrator Tools are designed to assist integrators (who usually work in manufacturing or enterprise environment) with the process of BIOS/SMBIOS customization, OEM Windows* product key injection (OEM Activation 3.0, OA3), changing the Logo, etc. of ASUS® NUC AptioV based products.
The table describes the purpose of each of the Tools.

Tool	Description
iFlashV	iFlashV is a command line tool that allows you to: • Update the system BIOS • Update a logo image • Insert a specific OEM activation key
iDmiEdit	iDmiEdit (Desktop Management Interface Edit) allows you to modify strings associated with SMBIOS tables.
iCHLogo	iCHLogo allows you to replace the default Intel logo image with a custom image.
iSetupCfg	iSetupCfg is a command line tool which provides you an easy way to update NVRAM variables from within the EFI, Linux*, or Windows*-based environment. You can: • Extract variables directly from the BIOS. • Change settings using a text editor and then update the BIOS with the custom settings.

2.0 iCHLogo User Guide

2.1 Overview

The ASUS iCHLogo application allows you to replace the logo inside the APTIO Firmware file or Capsule file with a new one.

2.2 Requirements

2.2.1 Supported Operating Systems

The iCHLogo application is supported by the following operating systems:

iCHLogo for Windows	• iCHLogoWin32.exe is supported on Windows 32-bit operating systems. • iCHLogoWin64.exe is supported on Windows 64-bit operating systems. iCHLogo for Windows is run from a Command Prompt in Administrator mode: 1. Click the Windows button and type Command Prompt. 2. Right-click on Command Prompt and select Run as Administrator.
iCHLogo for Linux	• iCHLogoLnx64 is supported in Linux 64-bit operating systems.

2.2.2 Logo File Requirements

The iCHLogo application supports the following image formats:

Format	Description
.BMP	Supports 16 color, 256 color and 24bit Color BMPs
.JPEG	Restart intervals supported The X-density/Y-density should be 1:1 It doesn't support "Progressive encoding" It only supports YUV112 (color component sampling 1:1:2)
.PNG	8-bit grayscale, indexed color, and RGB color 16-bit RGB color

For splash screen logos:

- Maximum image size: 800x600 pixels
- Maximum file size: 256KB

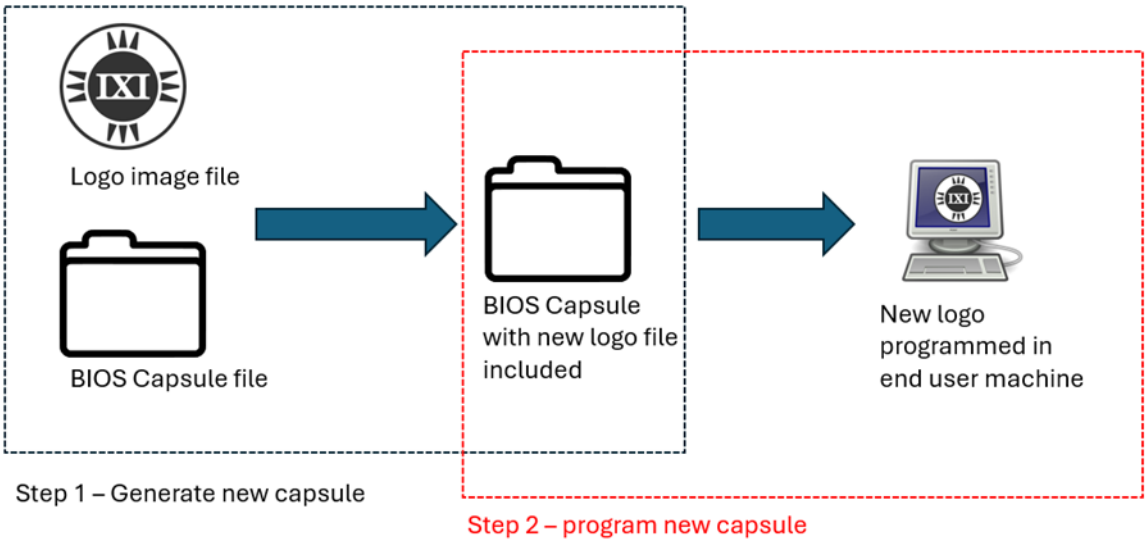
2.2.3 Firmware Requirements

The iCHLogo application requires that the input file be a **BIOS Capsule file** (for example: **FN0039.CAP**).

2.2.4 Installation

The iCHLogo application doesn't require an installer to run. Copy the iCHLogo executable into the preferred location on the hard drive and run the executable from the command window.

Copy the BIOS capsule file and any logo images you're using to the same folder location.



ICHLogo tool will do step1 while the iflashv will take care of step 2.

The iCHLogo application operates in command line mode. The below command switches are supported:

2.3 iCHLogo Usage

2.3.1 Command Line Switches

Switch	Description
/i	Indicates the input BIOS Capsule filename. Example: */i FN0039.cap*
/o	Indicates the output BIOS Capsule filename. Example: */o FN0039Custom.cap*
/f	Program will write over any existing logo file (force)

/e	Extracts an image from a BIOS Capsule file
/r	Replaces an existing logo
/d	Deletes an existing logo image
/t	Tests a replacement logo file to see if it will fit available space
/l	Lists information about the current splash logo

2.3.2 Test for Fit

A replacement logo file may be tested to see if it will fit.

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <BIOS Capsule file> /t <logo file>
Windows 32-bit	iCHLogoWin32.exe /i <BIOS Capsule file> /t <logo file>
Linux 64-bit	iCHLogoLnx64 /i <BIOS Capsule file> /t <logo file>

If the image will not fit, the program will issue an error message.

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /t hummingbird-small.jpg**

Logo [hummingbird-small.jpg] will fit into the image [FN0039.cap]

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /t hummingbird-large.jpg**

Warning! Logo size 1392x866 exceeds BIOS maximum size 800x600

2.3.3 Report Logo Image Types

Displays information about the current splash logo inside the .CAP file.

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <BIOS Capsule file> /l
Windows 32-bit	iCHLogoWin32.exe /i <BIOS Capsule file> /l
Linux 64-bit	iCHLogoLnx64 /i <BIOS Capsule file> /l

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /l**

Splash Logo – Mainstream409x307.JPG is JPEG (*.jpg)

2.3.4 Logo Extraction

Extracts the logo inside a BIOS capsule file and saves it with a file extension appropriate for the logo graphic image type (bmp, jpeg, or png).

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <BIOS Capsule file> /e <logo file> [/f]
Windows 32-bit	iCHLogoWin32.exe /i <BIOS Capsule file> /e <logo file> [/f]
Linux 64-bit	iCHLogoLnx64 /i <BIOS Capsule file> /e <logo file> [/f]

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /e Mainstreamlogo**

Extracted logo [Mainstreamlogo] from image [FN0039.cap] successfully!

2.3.5 Logo Replacement

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /r <logo file> [/f]
Windows 32-bit	iCHLogoWin32.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /r <logo file> [/f]
Linux 64-bit	iCHLogoLnx64 /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /r <logo file> [/f]

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /o FN0039bird.cap /r hummingbird.jpg**

Replaced existing logo with hummingbird.jpg.
New image [FN0039bird.cap] created successfully

2.3.6 Logo Deletion

Deletes any existing logo file inside a BIOS capsule.

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /d [/f]
Windows 32-bit	iCHLogoWin32.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /d [/f]
Linux 64-bit	iCHLogoLnx64 /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /d [/f]

Example result from command: **iCHLogoWin64.exe /i FN0039.cap /o FN0039NoLogo.cap /d /f**

Deleted splash logo from image [FN0039.cap] and generated new image [FN0039NoLogo.cap] successfully!

2.3.7 Logo Addition

A logo can be added in cases where the logo is absent or previously deleted.

OS / Environment	Command Syntax
Windows 64-bit	iCHLogoWin64.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /a <logo file> [/f]
Windows 32-bit	iCHLogoWin32.exe /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /a <logo file> [/f]
Linux 64-bit	iCHLogoLnx64 /i <Input BIOS Capsule file> /o <output BIOS Capsule file> /a <logo file> [/f]

If the logo is already present it is considered an error and you must use the replace operation instead. Firmware volumes are tested until a volume with enough room is found.

Example result from command: **iCHLogoWin64.exe /i FN0039NoLogo.cap /o FN0039Logo.cap /a hummingbird-sm.jpg /f**

Logo [hummingbird-sm.jpg] inserted.
New image [FN0039Logo.cap] created successfully!

2.3.8 Easy Build and replace Logo for windows environment

Easy update using premade batch file for logo replacement.

OS / Environment	Command Syntax
Windows 64-bit	Replacelogow64.bat <BIOSCapsule> <logofile> <optional outputcapfilename>

<BIOSCapsule> file is the released BIOS capsule.

<logofile> Generated by customer

Example command: **c:\logotest> replacelogow64.bat FN0039.cap hummingbird.jpg fn0039Logo.cap**

Where replacelogow64.bat file:

```
@echo off
set THIS_SCRIPT_DIR=%~dp0
set INPUT_CAPSULE=%1
set LOGO_FILE=%2
set NEW_CAP_NAME=%3
 if "%INPUT_CAPSULE%" == "" (
goto Error )
 if "%LOGO_FILE%" == "" (
  goto Error )
```

```
if "%NEW_CAP_NAME%" == "" (
set NEW_CAP_NAME=%THIS_SCRIPT_DIR%logo.cap )
 echo on
iChLogoWin64.exe /i %INPUT_CAPSULE% /o %NEW_CAP_NAME% /r %LOGO_FILE%
iFlashVWin64.exe %NEW_CAP_NAME% /k1
goto Exit
 :Error
@echo on
REM Usage: c:\logotest>replacelogo.bat "BIOSCapsule" "logofile" "optional outputcapfilename"
REM Example: c:\logotest>replacelogo.bat BIOScapsulefile.cap logoimagefile.jpg
REM Example: c:\logotest>replacelogo.bat BIOScapsulefile.cap logoimagefile.jpg optionalcapfileoutput.cap
 :Exit
```

2.4 iCHLogo Error Codes

Error Code	Error	Description
1	EXIT_SYNTAX	Command line syntax error
2	EXIT_IMAGE_SAVE_ERROR	Image save error
4	EXIT_LOGO_NOT_FOUND	Logo(s) not found in image
5	EXIT_IMAGE_LOAD	Failed to load image
6	EXIT_IMAGE_TYPES	Replacement image type different
7	EXIT_REPLACE_ERROR	Replacement operation failed
8	EXIT_NO_LOGO_FILE	Logo file does not exist
9	EXIT_WRITE_PROTECT	Logo file or image is write-protected
10	EXIT_FILE_EXISTS	File would be over written
13	EXIT_LOGO_EXISTS	Insertion would replace existing logo
14	EXIT_ADD_ERROR	Add logo failed
15	EXIT_OTHER	Unclassified error
16	EXIT_UNSUPPORTED_SIZE	Logo size exceeds BIOS limits
17	EXIT_UNSUPPORTED_TYPE	Logo type not supported by BIOS
18	EXIT_INCORRECT_PLATFORM_NAME	Platform name is incorrect in CMD for multi-platform supported rom image
19	EXIT_INVALID_ARGUMENT	Invalid argument in command

24	EXIT_CREATE_LOGO_ERROR	Error in creating new logo
25	EXIT_TEST_FIT_FAILED	Test fit failed
26	EXIT_UNSUPPORTED_JPEG	Jpeg logo contains unsupported data type
27	EXIT_UNSUPPORTED_PNG	PNG logo contains unsupported data type
29	EXIT_LOGO_EXTRACT_ERROR	Extract operation failed