Aptio* V Integrator Tool - iSetupCfg

User Guide

January 2024



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Contents

1.0 Introduction 5

2.0 iSetupCfg User Guide 6

2.1 Overview 6
2.2 Features 6
2.3 Restrictions 7
2.4.1 Supported Operating Systems 8
2.4.2 BIOS Security Settings 8
2.5 iSetupCFG Usage 9
2.5.1 Command Line Switches 9
2.5.2 Export All BIOS Settings to script file 9
2.5.3 Export All settings that deviate from the default BIOS Settings to script file 10
2.5.4 Get the Current Map String Value of a Single BIOS Option 11
2.5.5 Update a Single BIOS Option without script file 11
2.5.6 Update Multiple BIOS Options using script file 13
2.5.7 Change User/Admin Password 14
2.6 iSetupCfg Error Codes 15

Revision History

Date	Revision	Description
December 2019	1.0	Initial release.
May 2020	2.0	Additional command line examples.
December 2020	3.0	Added Restrictions section (2.3) and Tiger Lake support
January 2021	4.0	Additional Tiger Lake support
October 2021	5.0	Fixed issue: “49-Error: A Platform condition has prevented executing”, caused by some Crucial memory SO-DIMMs.
January 2024	6.0	Asus rebrand update
March 2025	6.11	Remove restriction for password
July 2025	6.12	Enhance document to clarify usages, make it easier to read for consumers

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.

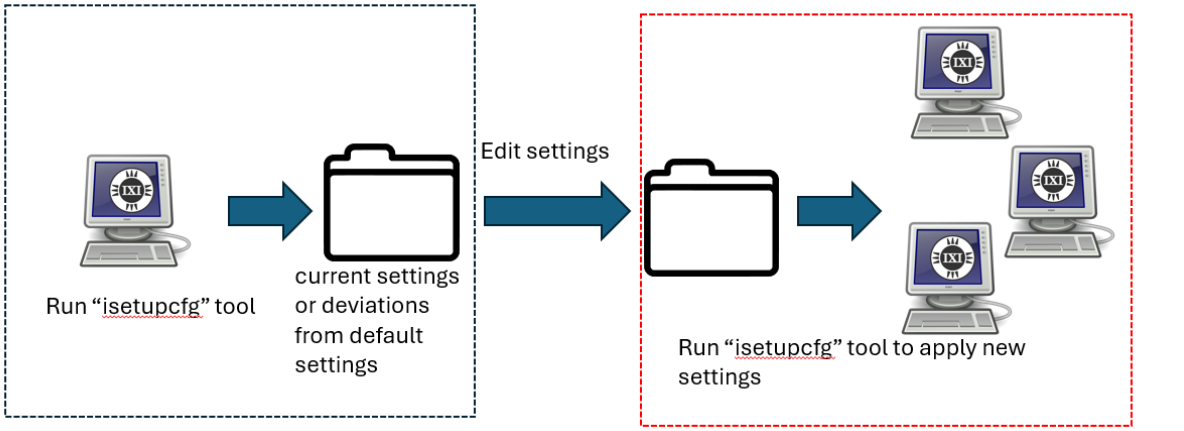
Tool	Description
iFlashV	iFlashV is a command line tool that allows you to: • Update the system BIOS • Update a logo image • Insert a specific OEM activation key
iDmiEdit	iDmiEdit (Desktop Management Interface Edit) allows you to modify strings associated with SMBIOS tables.
iCHLogo	iCHLogo allows you 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 iSetupCfg User Guide

2.1 Overview

iSetupCfg allows you to update BIOS settings from within the Windows, EFI shell or Linux environment. You can extract current settings directly from the BIOS, change them using either a text editor or a setup program, and then update the BIOS with the new settings. Each of these actions may take place on a different system.

iSetupCfg produces a script file that lists all setup questions on the system where iSetupCfg is running. You can then modify the script file and use it as input to change the current BIOS settings.



Step 1 – Collect settings from a physical system

Step 2 – make modifications and program desired settings to one or multiple systems

2.2 Features

The iSetupCfg tool allows you to perform the following functions:

- Read BIOS settings at run time to config files that may be edited as text
- Load a script file created by the above process and update a target system with custom BIOS
- Enables advanced scripting mode that presents data as setup questions and associated settings
- Enables advanced scripting mode to update setup question defaults
- Provides Command line operation
- Support to export only questions whose value is different from default
- Supports suppression of duplicate questions

- Unlocks protected variable update with administrator password
- Support to change user/admin password

- Aptio V BIOS Identification
- Supports managing duplicate/unmatched setup questions
- Supports Migration of Settings
- Boot order synchronization
- UEFI spec support

2.3 Restrictions

Options under the following BIOS menus can't be modified using iSetupCfg:

- Performance page
- Secure Boot page
- Add-In Config page
- ~~BIOS Password,~~ Hard Drive Password and TCG Storage Security Password

2.4 Requirements

2.4.1 Supported Operating Systems

iSetupCfg for Windows	• iSetupCfgWin32.exe is supported on Windows 32-bit operating systems. It requires the Windows platform driver amifldrv32.sys and amigendrv32.sys. • iSetupCfgWin64.exe is supported on Windows 64-bit operating systems. It requires the Windows platform driver amifldrv64.sys and amigendrv64.sys. iSetupCfg for Windows must be 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.**
iSetupCfg for EFI	• iSetupCfgEfi32.efi is supported in EFI shell. • iSetupCfgEfi64.efi: is supported in EFIx64 shell.
iSetupCfg for Linux	• iSetupCfgLnx32 is supported in Linux 32-bit operating systems. • iSetupCfgLnx64 is supported in Linux 64-bit operating systems.

2.4.2 BIOS Security Settings

For security reasons, a BIOS Admin/Supervisor password is required to make changes to BIOS settings using the iSetupCfg tool.

If you have a password installed, you can include the password in the iSetupCfg commands using the /cpwd command line switch. Example: **/cpwd 123456**

If you don't have a password installed, follow these steps:

1. Press **F2** during boot to enter BIOS setup.
2. Go to **Security** > **Security Features**.
3. Set **iSetupCfg Password Check** to **Bypass**. This allows you to pass a 'dummy' password using the command line switch ***/cpwd admin***.
4. Press **F10** to save and exit BIOS Setup.

2.5 iSetupCFG Usage

2.5.1 Command Line Switches

Switch	Description
/i	Indicates the input of variable. Example: BIOS script filename input: */i FN0039.txt*
/o	Indicates the output of variable. Example: BIOS script filename output: */o FN0039Custom.txt*
/s	Indicates a script file
/q	Indicates Quiet mode to suppress all warning messages
/ds	Indicates the values can be set as BIOS Standard Default Values
/b	Enables the export and import of boot order controls
/cpwd	Validates the current Supervisor password and unlocks the protected variables update
/apwd	Sets a new Supervisor password
/upwd	Sets a new User password
/ms	Indicates Map String of the Setup Question
/qv	Indicates Question Value to be set for the Setup Question
/ndef	Export only those settings whose current value is different from the default

2.5.2 Export All BIOS Settings to script file

Exporting values to a text file provides details about every BIOS setting, including the map string and current value. You'll need to know the map strings of the options you wish to change.

Example command line to export all BIOS settings to a text file.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /o /s filename.txt
Windows 32-bit	iSetupCfgWin32.exe /o /s filename.txt
EFI shell 32-bit	iSetupCfgEfi32.efi /o /s filename.txt
EFI shell 64-bit	iSetupCfgEfi64.efi /o /s filename.txt
Linux 64-bit	iSetupCfgLnx64 /o /s filename.txt
Linux 32-bit	iSetupCfgLnx32 /o /s filename.txt

The BIOS settings in the resulting text file appear as in the following example (header followed by each setup question):

// Script File Name : filename.txt
// Created on 11/06/24 at 13:33:53
// iSetupCfg Utility. Ver 5.05.0004
// Copyright (c) 2023 AMI. All rights reserved.

HIICrc32= 379DA9A8

Setup Question = Hard Disk Pre-Delay
Map String = SPG01A
Token =1D // Do NOT change this line
Offset =792
Width =01
BIOS Default =<0> <= Change this to change a default setting (F9 load)
Value =<0> <= Change this to change the settings for future, valid until defaults loaded

2.5.3 Export All settings that deviate from the default BIOS Settings to script file

A common usage is to boot a system, change settings in BIOS setup to the wanted settings, then save and reboot to export the modified values. Export modified BIOS setting, including the map string and current value.

Example command line to export all the modified BIOS settings to a text file.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /o /s filename.txt /ndef
Windows 32-bit	iSetupCfgWin32.exe /o /s filename.txt /ndef
EFI shell 32-bit	iSetupCfgEfi32.efi /o /s filename.txt /ndef
EFI shell 64-bit	iSetupCfgEfi64.efi /o /s filename.txt /ndef
Linux 64-bit	iSetupCfgLnx64 /o /s filename.txt /ndef
Linux 32-bit	iSetupCfgLnx32 /o /s filename.txt /ndef

The BIOS settings in the resulting text file appear as in the following example (header followed by each setup question):

// Script File Name : modified.txt
// Created on 11/06/24 at 13:33:53
// iSetupCfg Utility. Ver 5.05.0004
// Copyright (c) 2023 AMI. All rights reserved.

HIICrc32= 379DA9A8

Setup Question = Hard Disk Pre-Delay
Map String = SPG01A
Token =1D // Do NOT change this line
Offset =792
Width =01
BIOS Default =<0>
Value =<1>

2.5.4 Get the Current Map String Value of a Single BIOS Option

Example command line to return the value of a single BIOS option.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /o /ms SPG01A
Windows 32-bit	iSetupCfgWin32.exe /o /ms SPG01A
EFI shell 32-bit	iSetupCfgEfi32.efi /o /ms SPG01A
EFI shell 64-bit	iSetupCfgEfi64.efi /o /ms SPG01A
Linux 64-bit	iSetupCfgLnx64 /o /ms SPG01A
Linux 32-bit	iSetupCfgLnx32 /o /ms SPG01A

The example above returns the value of the Map String SPG01A (Hard Disk Pre-Delay):

Value =<0>

2.5.5 Update a Single BIOS Option without script file

This feature allows to update single setup questions from command line without using a script file. It makes use of the mapping language string to uniquely identify the question. The command line usage is shown below:

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]
Windows 32-bit	iSetupCfgWin32.exe /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]
EFI shell 32-bit	iSetupCfgEfi32.efi /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]
EFI shell 64-bit	iSetupCfgEfi64.efi /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]
Linux 64-bit	iSetupCfgLnx64 /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]
Linux 32-bit	iSetupCfgLnx32 /i /cpwd <current supervisor password> /ms <question map string> /qv <question value> [/q] [/ds]

Examples of single question updates

Boot Order question: The question value should be a comma separated list of boot devices where each boot device is represented using the unique number assigned to it in the UEFI boot order. The list should contain all devices in the current boot order.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /ms SETUP006 /qv 0x0002,0x0001
Windows 32-bit	iSetupCfgWin32.exe /i /ms SETUP006 /qv 0x0002,0x0001
EFI shell 32-bit	iSetupCfgEfi32.efi /i /ms SETUP006 /qv 0x0002,0x0001
EFI shell 64-bit	iSetupCfgEfi64.efi /i /ms SETUP006 /qv 0x0002,0x0001
Linux 64-bit	iSetupCfgLnx64 /i /ms SETUP006 /qv 0x0002,0x0001
Linux 32-bit	iSetupCfgLnx32 /i /ms SETUP006 /qv 0x0002,0x0001

Numeric question: The question value represents the new value. This should be within the valid range.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09
Windows 32-bit	iSetupCfgWin32.exe /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09
EFI shell 32-bit	iSetupCfgEfi32.efi /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09
EFI shell 64-bit	iSetupCfgEfi64.efi /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09
Linux 64-bit	iSetupCfgLnx64 /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09
Linux 32-bit	iSetupCfgLnx32 /i /cpwd <supervisor password. /ms SETUP004 /qv 0x09

Checkbox question: The question value should be either 0 or 1.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01
Windows 32-bit	iSetupCfgWin32.exe /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01
EFI shell 32-bit	iSetupCfgEfi32.efi /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01
EFI shell 64-bit	iSetupCfgEfi64.efi /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01
Linux 64-bit	iSetupCfgLnx64 /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01
Linux 32-bit	iSetupCfgLnx32 /i /cpwd <supervisor password. /ms SETUP005 /qv 0x01

One-of question: The question value represents the index of the option in the list of options.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02
Windows 32-bit	iSetupCfgWin32.exe /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02
EFI shell 32-bit	iSetupCfgEfi32.efi /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02
EFI shell 64-bit	iSetupCfgEfi64.efi /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02
Linux 64-bit	iSetupCfgLnx64 /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02
Linux 32-bit	iSetupCfgLnx32 /i /cpwd <supervisor password. /ms SETUP006 /qv 0x02

2.5.6 Update Multiple BIOS Options using script file

From the command line, execute iSetupCfg using the following command to save all BIOS settings to a script file.

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /o /s script-filename.txt [/b]
Windows 32-bit	iSetupCfgWin32.exe /o /s script-filename.txt [/b]
EFI shell 32-bit	iSetupCfgEfi32.efi /o /s script-filename.txt [/b]
EFI shell 64-bit	iSetupCfgEfi64.efi /o /s script-filename.txt [/b]
Linux 64-bit	iSetupCfgLnx64 /o /s script-filename.txt [/b]
Linux 32-bit	iSetupCfgLnx32 /o /s script-filename.txt [/b]

The default export behavior without the **/b** option is to NOT export boot order controls. To enable exporting of boot order controls, include the **/b** option.

Format of the scriptfile needs to contain the header followed by the options:

```
// Script File Name : filename.txt
// Created on 11/06/24 at 13:33:53
// iSetupCfg Utility. Ver 5.05.0004
// Copyright (c) 2023 AMI. All rights reserved.

HIICrc32= 379DA9A8

Setup Question = Hard Disk Pre-Delay
    Map String          = SPG01A
    Token       =1D     // Do NOT change this line
    Offset      =792
    Width       =01
    BIOS Default        =<0>
    Value       =<0>
```

Open the script file in a text editor and modify the desired BIOS setting values and save the modifications. You can remove any setup questions that you do not wish to update. Make sure you keep the header sections at top.

```
// Script File Name : newsettings.txt
// Created on 11/06/24 at 13:33:53
// iSetupCfg Utility. Ver 5.05.0004
// Copyright (c) 2023 AMI. All rights reserved.

HIICrc32= 379DA9A8
```

After editing the file, execute the following command to upload the changed settings from the script file:

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]
Windows 32-bit	iSetupCfgWin32.exe /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]

EFI shell 32-bit	iSetupCfgEfi32.efi /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]
EFI shell 64-bit	iSetupCfgEfi64.efi /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]
Linux 64-bit	iSetupCfgLnx64 /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]
Linux 32-bit	iSetupCfgLnx32 /i /cpwd <supervisor password> /s script-filename.txt [/ds] [/b] [/q]

Example:
C:\> iSetupCfgWin64.exe /i /cpwd admin /s newsettings.txt

2.5.7 Change User/Admin Password

iSetupCfg supports changing the user and admin passwords for BIOS setup. The current admin password must be provided using /cpwd.

To change the Supervisor password:

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /cpwd <current supervisor password> /apwd <new supervisor password>
Windows 32-bit	iSetupCfgWin32.exe /cpwd <current supervisor password> /apwd <new supervisor password>
EFI shell 32-bit	iSetupCfgEfi32.efi /cpwd <current supervisor password> /apwd <new supervisor password>
EFI shell 64-bit	iSetupCfgEfi64.efi /cpwd <current supervisor password> /apwd <new supervisor password>
Linux 64-bit	iSetupCfgLnx64 /cpwd <current supervisor password> /apwd <new supervisor password>
Linux 32-bit	iSetupCfgLnx32 /cpwd <current supervisor password> /apwd <new supervisor password>

To change the User password:

OS / Environment	Command Syntax
Windows 64-bit	iSetupCfgWin64.exe /cpwd <current supervisor password> /upwd <new user password>
Windows 32-bit	iSetupCfgWin32.exe /cpwd <current supervisor password> /upwd <new user password>
EFI shell 32-bit	iSetupCfgEfi32.efi /cpwd <current supervisor password> /upwd <new user password>
EFI shell 64-bit	iSetupCfgEfi64.efi /cpwd <current supervisor password> /upwd <new user password>
Linux 64-bit	iSetupCfgLnx64 /cpwd <current supervisor password> /upwd <new user password>
Linux 32-bit	iSetupCfgLnx32 /cpwd <current supervisor password> /upwd <new user password>

To change the Supervisor and User password:

OS / Environment	Command Syntax

Windows 64-bit	iSetupCfgWin64.exe /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>
Windows 32-bit	iSetupCfgWin32.exe /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>
EFI shell 32-bit	iSetupCfgEfi32.efi /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>
EFI shell 64-bit	iSetupCfgEfi64.efi /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>
Linux 64-bit	iSetupCfgLnx64 /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>
Linux 32-bit	iSetupCfgLnx32 /cpwd <current supervisor password> /apwd <new supervisor password> /upwd <new user password>

2.6 iSetupCfg Error Codes

Error	Description
Error in writing variable Setup to NVRAM	Check if you need to include a supervisor password with the /cpwd command line switch. See Section 2.3.2.