



HP BIOS Configuration Utility (BCU)

User Guide

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About this guide

This guide might use one or more of the following styles to distinguish elements of text:

| Style | Definition |
|------------------------------------|--|
| <code><variable></code> | Variables or placeholders are enclosed in angle brackets. For example, replace <code><pathname></code> with the appropriate path, such as <code>C:\Windows\System</code> . When typing the actual value for the variable, omit the brackets. |
| <code>[optional parameters]</code> | Optional parameters are enclosed in square brackets. When specifying the parameters, omit the brackets. |
| <code>"literal value"</code> | Command line text that appears inside quotation marks should be typed exactly as shown, including the quotation marks. |

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1 Getting started

What is HP BIOS Configuration Utility?

HP BIOS Configuration Utility (BCU) is a free utility that enables you to do the following:

- Read available BIOS settings and their values from a supported desktop, workstation, or notebook computer
- Set or reset Setup Password on a supported desktop, workstation, or notebook computer
- Replicate BIOS settings across multiple client computers

Download the latest version of BCU from <http://www.hp.com/go/clientmanagement>.

System requirements

Table 1-1 Minimum hardware and software for clients

Windows 7, Windows 8, Windows 8.1, or Windows PE (version 4.0.1.1 or later)

NOTE: BIOS setting management is supported under Windows PE 3.x, 4.0, or 5.0. See [WMI support required on page 4](#).

NOTE: Support of Windows XP and Windows Vista has been deprecated in BCU version 4.0.

Installation

Run the BCU SoftPak to install its contents to the folder `<PROGRAMFILES_DIR>\Hewlett-Packard\BIOS Configuration Utility\`, where `<PROGRAMFILES_DIR>` is the Program Files folder on the target system (e.g. `C:\PROGRAM FILES`). The resulting files at the target folder include:

- **BIOSConfigUtility.exe**
- **BIOSConfigUtility64.exe**
- **HPQPswd.exe**
- **HPQPswd64.exe**
- Internet shortcut to **BIOS Configuration Utility User Guide.pdf**

2 Command line parameters

Use the following syntax to run BCU:

```
BIOSConfigUtility.exe <options>
```

—or—

```
BIOSConfigUtility64.exe <options>
```

The valid options are:

| Parameter | Description |
|---|---|
| <code>/Get:"filename"</code> | Gets the configuration data. |
| —or— | NOTE: If "filename" is empty, BCU writes configuration data to the output console. |
| <code>/GetConfig:"filename"</code> | |
| <code>/Set:"filename"</code> | Modifies the system BIOS configuration. Accepts only REPSET formatted files. |
| —or— | |
| <code>/SetConfig:"filename"</code> | |
| <code>/cspwdfilename:"filename"</code> | Specifies the current BIOS Setup Password by providing an encrypted password file. Current password should be provided when changing BIOS settings or password. Can specify only one current password file. Use HPQPswd.exe to generate password file. See Password management on page 6 for additional details on this utility. |
| —or— | NOTE: Requires BCU version 3.0.1.1 or later. |
| <code>/CurSetupPasswordFile:"filename"</code> | |
| —or— | |
| <code>/cpwdfilename:"filename"</code> | If using a BCU version earlier than 4.0.1.1, use <code>/cspwdfilename:"filename"</code> . |
| <code>/nspwdfilename:"filename"</code> | Specifies the new BIOS Setup Password by providing an encrypted password file. To remove the password, use <code>/nspwdfilename:""</code> . Use HPQPswd.exe to generate the password file. See Password management on page 6 for additional details on this utility. |
| —or— | NOTE: Clearing the BIOS Setup Password will remove all BIOS Users. |
| <code>/NewSetupPasswordFile:"filename"</code> | |
| —or— | |
| <code>/nspwdfilename:"filename"</code> | Requires BCU version 3.0.1.1 or later. If using a BCU version earlier than 4.0.1.1, use <code>/nspwdfilename:"filename"</code> . |
| <code>/?</code> | Displays a help message. |
| —or— | |
| <code>/Help</code> | |
| <code>/SetDefaults</code> | Sets BIOS settings to their default values. NOTE: <code>/SetDefaults</code> does not change every possible value; also, it does not change settings on an individual basis. |
| <code>/verbose</code> | When used with <code>/Set</code> , displays details about each setting, such as success, the reason for failure (warning), or failure code (error). |
| <code>/WarningAsErr</code> | When used with <code>/Set</code> , displays details about each setting. Unlike <code>/verbose</code> , any settings not applied due to warnings cause BCU to return program error code 13 instead of success. |

| Parameter | Description |
|------------------------|--|
| | NOTE: Requires BCU 3.0.11.1 or later. When both <code>/verbose</code> and <code>/WarningAsErr</code> are used, <code>/WarningAsErr</code> will take precedence. |
| <code>/Unicode</code> | Checks platform support for Unicode passwords only. If not supported, returns error code 32. Use only in batch files; this command is not compatible with other commands. NOTE: Requires BCU version 4.0.1.1 or later. |
| <code>/log</code> | Generates the log folder and log file default to the executable folder. NOTE: Requires BCU version 4.0.1.1 or later. |
| <code>/getvalue</code> | Gets the value of a given setting without using the config file. Example: <code>BCU.exe /getvalue:"Asset Tracking Number"</code> NOTE: Requires BCU version 4.0.1.1 or later. |
| <code>/setvalue</code> | Sets the value of a given setting without using the config file. Example: <code>BCU.exe /setvalue:"Asset Tracking Number","12345678"</code> NOTE: Requires BCU version 4.0.1.1 or later. |

3 BIOS configuration

BCU is a Windows-based tool that lets you create standard configuration settings and deploy them across the enterprise. By creating a configuration text file with only the setting you want to change, you can deploy it to all systems in the enterprise. If a particular system does not support the specified setting, it will be ignored.

WMI support required

BCU requires HP custom WMI namespace and WMI classes (at the namespace root\HP\InstrumentedBIOS) provided by BIOS. BCU will only support models with a WMI-compliant BIOS, which are most commercial HP desktops, notebooks, and workstations.


Before running BCU, it is helpful to make sure that the HP BIOS WMI classes are in the namespace root\HP\InstrumentedBIOS. When using BCU in WinPE, ensure that the WMI component is added to the boot image using Microsoft® Deployment Image Servicing and Management (DISM) tool.


Replicated setup

To create, save, and deploy the configuration settings, complete the following procedure:

1. Run the program **BIOSConfigUtility.exe** using the `/GetConfig:config.txt` command-line parameter.
2. Edit the file **config.txt**. Remove properties that you do not want to change and modify the other properties.

 **NOTE:** Some properties, such as model and manufacturer, are read-only. Such properties will be ignored with a warning if specified during `/SetConfig`.

 **NOTE:** If a property value has not changed in the input configuration file from its existing value in BIOS, it will be skipped during `/SetConfig`. It is recommended to remove such settings during `/SetConfig` operation.

 **NOTE:** If a property name or value is invalid or does not exist on the client system, such settings will be ignored with a warning during `/SetConfig`.

The following **config.txt** example shows a configuration file that changes some properties:

```
BIOSConfig 1.0
;
; Originally created by BIOS Configuration Utility
; Version 4.0.10.1
; Date="2015-03-20" Time="14:37:40" UTC="-5"
;
; Found 214 settings
Asset Tracking Number
CORPTAG001ABCDEF
```

```
Removable Media Boot
    Enable
    *Disable

Removable Media Write
    Enable
    *Disable

Enter Ownership Tag
    property of company XYZ

Boot Order
    Network Controller
    PnP Device#1
    Hard Drive (C:)
    CD-ROM Drive
    IDE CD-ROM Drive
    Multibay Device (A: or CD-ROM)
    Diskette Drive (A:)
    USB device

Cover Lock
    Unlock
    *Lock
```

3. Run **BIOSConfigUtility.exe** with the `/SetConfig:config.txt` command-line parameter to apply the settings contained in **config.txt**.

Important notes

- The `/Set` and `/Get` functionality is supported on select commercial desktop, mobile, and workstation systems. Supported settings vary by model.
- In BCU version 4.0.1.1 and later, the first line of the configuration file must be the word “BIOSConfig”, follow by the file format version, currently 1.0. For backwards compatibility, the word “English” is accepted. This keyword is deprecated and support may be removed in the future. For BCU versions earlier than 4.0.1.1, the first line must be the word “English”.
- The settings are indented with a `tab` character.



IMPORTANT: Indenting with space characters will not work.

- There is no space between `/command:` and the filename.
- Arguments containing spaces must be entered within quotes.
- For commands that contain two comma-separated arguments, there must not be a space before or after the comma.

- Only password changes are guaranteed to take effect immediately and without a reboot. All other settings might not take effect until after a reboot.
- The exact strings for some boot devices may vary between models. For example, the network controller for Boot Order was identified with the tag “PNP Device #1” on one system and “Network Controller” on newer systems. If your environment includes a mix of systems, then ensure that all known values for a particular boot device are placed together in the list relative to the next type of boot device. See the example above. Devices not found on the system are ignored. See the example above, noting that CD-ROM is specified several different ways.
- It is recommended that you do not mix replicated setup changes with software updates that include BIOS firmware updates. It is a best practice to perform each operation independently and to restart the system between each operation. This procedure accommodates cases in which the internal structure of BIOS configuration setting information changes between BIOS revisions.

Password management

BCU also has the ability to establish, modify, and remove the BIOS setup password. Use the HP Password Encryption Utility (HPQPswd.exe) to create the password file needed to specify new or current password. It is available at HP Client Management Solutions website at <http://www.hp.com/go/clientmanagement>. See [HP Password Encryption Utility on page 16](#) for password utility usage samples.

Use the following sample command to create a setup password on a system with no existing password:

```
BIOSConfigUtility.exe /nspwdfilename:"new password.bin"
```

Use the following sample command to modify the BIOS setup password use:

```
BIOSConfigUtility.exe /nspwdfilename:"new password.bin" /cspwdfilename:"current password.bin"
```

Use the following sample command to remove the BIOS setup password use:

```
BIOSConfigUtility.exe /nspwdfilename:"" /cspwdfilename:"current password.bin"
```



NOTE: A password change command can be combined with BIOS configuration, in which case the password is modified before the configuration is applied.

```
BIOSConfigUtility.exe /set:"configuration.txt" /nspwdfilename:"new password.bin"
```

Comments

BCU configuration files support adding comments by using the ';' (semicolon) character. Any line that begins with ';' is treated as a comment. The white space (including tab) in front of ';' is ignored. The comment does not carry over to the next line.

Example usage of comments:

```
BIOSConfig 1.0
```

```
; This file shows usage of comments in configuration files
```

```
; Below is an example of comments using semicolon at beginning of line
```

```
Sunday
```

```
; *Disable
```

```
; Enable
```

```
; Below is an example of comments using semicolon after white space  
(includes tab)
```

```
Monday
```

```
    ;*Disable
```

```
    ;Enable
```

```
; Below is an example where the semicolon is NOT considered as a comment.
```

```
Parallel Port
```

```
IO=3BC; IRQ=7
```

```
IO=378; NOT comment
```

A Error codes

Table A-1 Error codes

| Error code | Description | Notes |
|------------|--|--|
| 0 | Success | Operation succeeded. |
| 1 | Not Supported | WMI result code – Setting is not supported on system. |
| 2 | Unknown | WMI result code – Operation failed for unknown reason. |
| 3 | Timeout | WMI result code – Operation timed out. |
| 4 | Failed | WMI result code – Operation failed. |
| 5 | Invalid Parameter | WMI result code – A parameter is missing or wrong type. |
| 6 | Access Denied | WMI result code – Setting modification failed due to BIOS permissions. |
| 10 | Valid password not provided. | BCU was unable to find a valid password on the command line in the following cases: <ul style="list-style-type: none">• When attempting to change the password, the correct password was not provided.• When attempting to change the password, the new password did not satisfy password requirements for the platform.• When attempting to change setting values, the correct password was not provided. |
| 11 | Config file not valid. | BCU was unable to locate the configuration file or unable to read the file at the specified path. |
| 12 | First line in config file is not the keyword “BIOSConfig”. | First line in the configuration file must be the word “BIOSConfig” followed by the file format version, currently “1.0”. |
| 13 | Failed to change setting. | BCU failed to change one or more settings. Use <code>/verbose</code> or <code>/WarningAsErr</code> to get status per setting. |
| 14 | BCU not ready to write file. | Not used. |
| 15 | Command line syntax error. | Possible reasons for this error include the following: <ul style="list-style-type: none">• Invalid command line option specified. Use <code>/?</code> or <code>/Help</code> for available options.• Invalid combination of command line options used.• Multiple password files were specified. Only one new or current setup password file can be provided on command line.• No configuration file name was specified with <code>/set</code>.• No file name was specified with <code>/cspwdfilename</code> or <code>/nspwdfilename</code>. |
| 16 | Unable to write to file or system. | BCU was unable to connect to HP BIOS WMI. WMI classes are corrupted or the system is not supported. See the section WMI support required on page 4 for additional information. |
| 17 | Help is invoked. | Show usage text. |

Table A-1 Error codes (continued)

| Error code | Description | Notes |
|-------------------|--|---|
| 18 | Setting is unchanged. | This return code is returned by BCU on a per setting basis when <code>/verbose</code> or <code>/WarningAsErr</code> options are specified. Settings with this return code are skipped when BCU attempts to write to BIOS and do not affect BCU return code. |
| 19 | Setting is read-only. | This return code is returned by BCU on a per setting basis when <code>/verbose</code> or <code>/WarningAsErr</code> options are specified. Settings with this return code are skipped when BCU attempts to write to BIOS. When <code>/verbose</code> is used, this return code generates a warning and does not affect the BCU return code. If <code>/WarningAsErr</code> is used, it results in BCU error code 13. |
| 20 | Invalid setting name. | This return code is returned by BCU on a per setting basis when <code>/verbose</code> or <code>/WarningAsErr</code> options are specified. Settings with this return code are skipped when BCU attempts to write to BIOS. When <code>/verbose</code> is used, this return code generates a warning and does not affect the BCU return code. If <code>/WarningAsErr</code> is used, it results in BCU error code 13. |
| 21 | Invalid setting value. | This return code is returned by BCU on a per setting basis when <code>/verbose</code> or <code>/WarningAsErr</code> options are specified. Settings with this return code are skipped when BCU attempts to write to BIOS. When <code>/verbose</code> is used, this return code generates a warning and does not affect the BCU return code. If <code>/WarningAsErr</code> is used, it results in BCU error code 13. |
| 23 | Unable to connect to HP BIOS WMI namespace. | System not supported. Unable to connect to HP BIOS WMI namespace: <code>root\HP\InstrumentedBIOS</code> . See the section WMI support required on page 4 for additional information. |
| 24 | Unable to connect to HP WMI namespace. | System not supported. Unable to connect to HP WMI namespace: <code>root\HP</code> . See the section WMI support required on page 4 for additional information. |
| 25 | Unable to connect to PUBLIC WMI namespace. | System not supported. Unable to connect to PUBLIC WMI namespace: <code>root\CIMV2</code> . Ensure that WMI service is enabled and running. |
| 30 | Password file error. | Unable to read or decrypt the password file. |
| 31 | Password is not F10 compatible. | If a platform does not support Unicode passwords, BCU can set and change the password, but the password will not function in F10 Setup. BCU must be used to change or clear it. |
| 32 | Platform does not support Unicode passwords. | Returned when the <code>/Unicode</code> option is used to check for support. |
| 33 | No settings to apply found in Config file. | Config file contains no settings or they are commented out. |

B Sample configuration file

This configuration file shows a partial list of the BIOS settings for an HP ZBook 15:

```
BIOSConfig 1.0
;
; Originally created by BIOS Configuration Utility
; Version: 4.0.1.1
; Date="2014-09-17" Time="09:39:33" UTC="-5"
;
; Found 244 settings
;
Manufacturer
    Hewlett-Packard
Product Name
    HP ZBook 15
System Board ID
    1909
Universal Unique Identifier(UUID)
    7FAC190ABD17E411A132884C5F06E0FF
Processor Type
    Intel(R) Core(TM) i7-4900MQ CPU
SKU Number
    D5H49AV#ABA
Warranty Start Date
    00/00/0000
Processor Speed
    2.80GHz
Sunday
    *Disable
    Enable
Monday
    *Disable
    Enable
```


Tuesday
 *Disable
 Enable

Wednesday
 *Disable
 Enable

Thursday
 *Disable
 Enable

Friday
 *Disable
 Enable

Saturday
 *Disable
 Enable

BIOS Power-On Time (hh:mm)
 00:00

PCID Version
 A3.00

System Configuration ID
 A3008DD20303

Define Custom URL

Total Memory Size
 16384 MB

Memory Slot 1 Information
 Top - Slot 2 (under) Hynix/Hyundai 4096 MB @ 1600 MHz

Memory Slot 2 Information
 Bottom-Slot 2(right) Samsung 4096 MB @ 1600 MHz

Memory Slot 3 Information
 Top - Slot 1 (top) Hynix/Hyundai 4096 MB @ 1600 MHz

Memory Slot 4 Information
 Bottom-Slot 1(left) Samsung 4096 MB @ 1600 MHz

Define Customized Boot Option

Enter Feature Byte
3X47676J6S6b7M7Q7U7W7saBaw.BQ

Enter Build ID
13WWAVCW601#SABA#DABA

BIOS Date
06/24/2014

System BIOS Version
L70 Ver. 01.10

Serial Number
CND3220CMX

Video BIOS Revision
Intel(R) GOP Driver [5.0.1028]

Video BIOS Revision 2
nVidia 05/15/14

Keyboard Controller Version
94.51

Ownership Tag

Asset Tracking Number

Primary Battery Serial Number
13577 5/4/2013

Serial port
*Disable
Enable

Thunderbolt port
DisplayPort only
PCIe and DisplayPort
*PCIe and DisplayPort - require user approval for Thunderbolt
legacy devices

Secondary Battery Serial Number
No Battery Present

Parallel port
*Disable
Enable

Flash media reader

Disable
*Enable
USB Port
Disable
*Enable
Express Card Slot
Disable
*Enable
Smart Card
*Disable
Enable
WWAN FCC ID
No Device Present
WLAN FCC ID
PD96235ANH
Bluetooth FCC ID
PD96235ANH
System Board CT
PXXXXA2WV4PYXW
Product Family
103C_5336AN G=D L=BUS B=HP S=ELI
eSATA Port
Disable
*Enable
GPS FCC ID
No Device Present
MicroCode Revision
16
Language
*English
Francais
Deutsch
Espanol
Italiano
Dansk

Nederlands
Suomi
Japanese
Norsk
Portugues
Svenska
Simplified Chinese
Traditional Chinese

Custom Logo
 *Disable
 Enable

CD-ROM boot
 *Disable
 Enable

Fast Boot
 Disable
 *Enable

Backlit Keyboard Timeout
 *5 secs.
 15 secs.
 30 secs.
 1 min.
 5 mins.
 Never

SD Card boot
 *Disable
 Enable

Floppy boot
 *Disable
 Enable

PXE Internal NTC boot
 *Disable
 Enable

Legacy Boot Order

mSATA Drive
Notebook Upgrade Bay
Notebook Hard Drive
USB Floppy
USB CD-ROM
USB Hard Drive
Notebook Ethernet
Dock Upgrade Bay
eSATA Drive
Boot Device 13

...

C HP Password Encryption Utility

The HP Password Encryption Utility (HPQPswd.exe) accepts a password entered by the user, encrypts the password, and then stores it in a file for use by the BIOS. This utility can be used in either command-line mode or GUI mode. To run it in GUI mode, double click the executable or run without parameters.

HP recommends using a strong password to protect managed assets.

The following is a sample command to create a password file in silent mode:

```
HpqPswd.exe /s /p"12345678" /f"sample password.bin"
```

In this example, /p specifies the password and /f specifies the name and path of the encrypted file.



NOTE: Use the /? command to invoke help for additional information on the password utility.

HPQPswd.exe currently supports a maximum of 32 characters.