

# UBoot64

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Boot menu for C64 Ultimate enabled devices

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```
Starting UBoot64.
```



```
Copying core to RAM.  
Ultimate Command Interface detected.  
ultimate-ii dos v1.2  
Reading slots: 67C5
```

```
Recognised Ultimate devices:  
Drive A: ID 8 Pow On, 1541  
Drive B: ID 9 Pow On, 1581  
SoftIEC: ID 11 Pow Off  
Printer: ID 4 Pow Off  
IDs needing manual power switching: Yes  
Active IEC IDs: 08 09 12
```

```
Updating UII+ time from NTP Server.  
Ultimate datetime: 2023/09/22 17:41:44  
Connecting to: pool.ntp.org  
Sending NTP request
```

```
UBoot64: Boot Menu for Ultimate devices
Welcome to your C64. 2023/09/22 17:59:11
```

```
0 CBM Commander
1 Next Level (Demo)
2 GDos64
3 BluREU
4 BluREU 3D
5 C64OS
```

```
F1 Filebrowser      F2 Information
F3 Edit/Order/Del  F5 NTP time config
F7 Quit to BASIC
Make your choice.
```

## Version history and download

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[Link to latest build](#)

Version 0.91 - 20230922-1818:

- First public alpha

## Instructions

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### Prerequisites

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- UltimattII+ (U2+) cartridge installed on a real C64, or an Ultimate 64.
- Firmware at version 3.4 or higher (to have access to the UCI DRVINFO command, link to firmware page, scroll down for U2 firmware: <https://ultimate64.com/Firmware> )

## Installation

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- Download the ZIP file with the latest build
- In the ZIP file you will find these instructions and a .crt file, the latter is the cartridge image containing the UBoot64 software. Unzip contents to a temporary location.
- Transfer this .crt file to the /Flash/Carts directory on your Ultimate device. Either transfer to this directory on your Ultimate device via FTP, or place it somewhere on the USB storage Ultimate device, browse to it in the UI filebrowser, press C= + C to copy, navigate to the /Flash/Carts dir and paste by C= + V/.

**\*\* Ultimate 64 Elite V1.42 - 3.10j \*\***

---

Flash	Flash Disk	Ready
Temp	RAM Disk	Ready
Usb0	Sandisk <sup>®</sup> Cruzer Fit	Ready
Net0	IP: 192.168.1.55	Link Up

/

-F3=Help-

**\*\* Ultimate 64 Elite V1.42 - 3.10j \*\***

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carts	DIR
roms	DIR

/Flash/

-F3=Help-





- Do a power cycle of your device. The UBoot64 software should now automatically start on starting your Ultimate device.
- Stop autostarting of UBoot64 by deselecting the cartridge via the same procedure and selecting **None** or another image as cartridge.

## First run

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- At first run no configuration file is present yet for the menu, so it will create configuration files with an empty start menu and default settings.
- The configuration files will be saved in the root directory of the first USB drive found (using /usb\*/ as path). The config files are called DMBCFG.CFG for the configuration data (for now only the NTP time settings) and DMBSLT.CFG (the menu slot data).
- The empty start menu looks like this:

```
UBoot64: Boot Menu for Ultimate devices
Welcome to your C64. 2023/09/22 22:41:34
```

```
F1 Filebrowser      F2 Information
F3 Edit/Order/Del  F5 NTP time config
F7 Quit to BASIC
Make your choice.
```

- For instructions of the menu options: see below.

## Add start options via the Filebrowser

- Start options can be added to menuslots 0-9 and A-Z via the Filebrowser. This can be either running an executable program, or booting a specific disk image.
- For this, first choose **F1** for filebrowser. You will get a screen like this:

```
UBoot64: Boot Menu for Ultimate devices
Filebrowser 2023/09/22 22:43:37

[UCI file system]
/USB*/
2sid-collection DIR
3sid-collection DIR
ARMSid          DIR
Blanks         DIR
C128Demo       DIR
C128Original   DIR
c128stuff      DIR
C64Demo        DIR
c64osupdates   DIR
chiptunes      DIR
Dev            DIR
Digidrum       DIR
Diskmag        DIR
Diskutils      DIR
dlair64ld+alpha DIR
Firmware       DIR
Floppybackup   DIR
Geos           DIR
GrafUtils      DIR

F1 Dir refr.
F3 UCI or IEC
RET Run/Select
DEL Dir up
↑ Root dir
↑ Top
E End
P/U Page up/do
Cur Navigate
AB Add mount
M Run mount
1 1 Load
0 Demo mode
F7 Quit

UCI mode
Trace OFF
1 Load ON
Demo OFF
```

- Full instructions for the filebrowser are below. Here only the quick instructions to add an option to the startmenu.
- The browser starts in the so called UCI mode. This means browsing via the Ultimate Command Interface on the native filesystem of your Ultimate device. For most purposes this is what is desired.
- If you want to add programs from other non Ultimate attached drives you can press **F3** to go to IEC mode. Select your desired drive target by switching pressing **+** or **-** to increase resp. decrease the device number until the desired device number is selected.
- Refresh directory by **F1** if needed (empty column)
- Only in IEC mode: As on IEC drives full paths can not be read on drives supporting directories, a directory trace should be started by pressing **D**. This starts a trace of your movements through the directory tree, starting from the root directory of your device. You should see the directory refreshing to this root directory. You should also see the TRACE toggle switched to ON in the lower right corner of the screen.
- Also note the other two toggles ,1 Load and Demo mode: these are toggled by pressing the **1** and **O** keys.

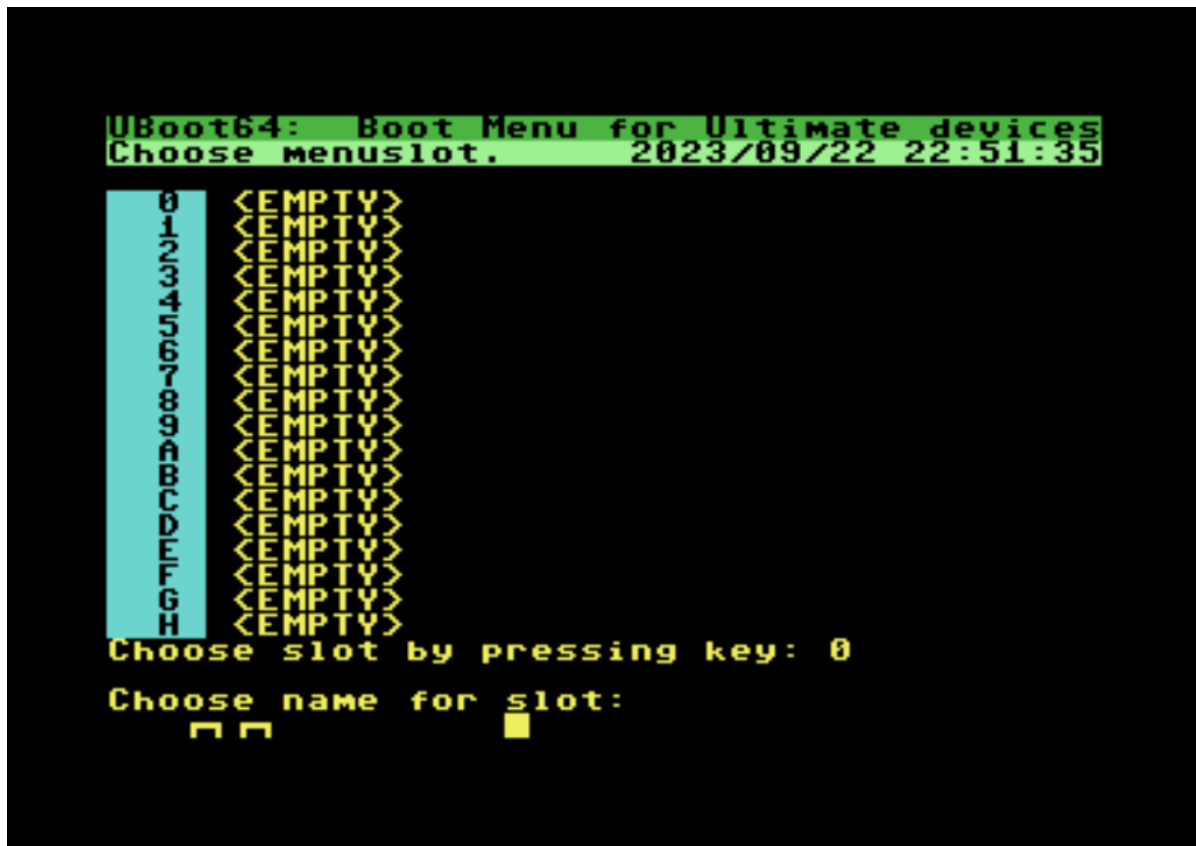


- ,1 Load: This steers if the program will be loaded with LOAD"NAME",8 (option off) or LOAD"NAME",8,1 (option on)
- Demo mode: This shuts down (or asks the user the shut down the drives which can nit automatically powered down) all drives but ID 8. Needed for most demos and some games.
- Browse to your desired target via the **Cursor keys**: **UP/DOWN** to move within the directory, **P** for page down and **U** for a page up, **ENTER** or **CURSOR RIGHT** on a directory or disk image to enter the selected directory or image, **DEL** or **CURSOR LEFT** to change to parent directory.
- From UCI mode, moving into a disk image (.DXX extension) mounts that image on drive A and goes to IEC node. You will see 'Inside mount' appearing in the menu.





- No validation if the configuration is correct or coherent is done, so setting up valid configurations is the users responsibility, Only very limited error handling on executing incorrectly configured menu slots is done. Mounts and REU file can be added or changed (by adding again and overwriting the previous one), but not deleted separately. To do so, the whole entry needs to be deleted. Adding an additional disk image to mount, a REU file and choosing the file to start require all separate actions in the filebrowser, so setting up a menuslot might take up to three entries to the filebrowser and navigating.
- After selecting what should be placed in a menuslot option, you should get this screen to select the menuslot position:



- If this slot is already (partly) filled, confirmation is asked. Choose Yes to proceed or No to Cancel.
- Choose **0-9** or **A-Z** key to choose the desired slot.
- Enter the desired name for the menuslot and press **ENTER**
- You now return to the main menu where you should see the menu option appearing.
- Repeat until you have selected all desired menuslot options

## F1: Filebrowse menu

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The filebrowser based and inspired by the DraBrowse program from <https://github.com/doj/dra-browser>



Menu options are similar, but have diverged.

Key	Function
<b>F1</b>	Read / refresh directory
<b>F3</b>	Toggle between UCI or IEC modes
<b>+</b>	Increase devicenumber (IEC mode only)
<b>-</b>	Decrease devicenumber (IEC mode only)
<b>RETURN</b>	Enter directory (IEC mode: or run the selected program)
<b>DEL</b>	Go to parent directory
<b>↑</b>	Go to root directory
<b>T</b>	Go to the first item in the directory
<b>E</b>	Go to the last item in the directory
<b>P</b>	Go a page down in the directory
<b>E</b>	Go a page up in the directory
<b>Cursor keys</b>	Navigate in the directory
<b>D</b>	Toggle Dirtrace: traces the directory movements from root directory to select menuslot option
<b>A</b>	Select the highlighted item as image to be mounted in drive A. Highlighted item should be an image with a .Dxx extention

Key	Function
<b>B</b>	Select the highlighted item as image to be mounted in drive B. Highlighted item should be an image with a .Dxx extention
<b>M</b>	Select the highlighted program to be started from the disk image mounted in drive A (instead of present device of dir)
<b>1</b>	Toggle ,1 load
<b>O</b>	Toggle demo mode
<b>Q</b>	Quit to main menu

## F2: Information

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Shows information screen. Press key to return to main menu.



## F3: Edit / re-order / delete

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Enables to rename menuslots, re-order the slots or delete a slot. Selecting provides this menu:

```

UBoot64: Boot Menu for Ultimate devices
Edit/Re-order/Delete 2023/09/22 23:38:45

0  CBM Commander
1  Next Level (Demo)
2  GDos64
3  BluREU
4  BluREU 3D
5  C640S
6  <EMPTY>
7  <EMPTY>
8  <EMPTY>
9  <EMPTY>
A  <EMPTY>
B  <EMPTY>
C  <EMPTY>
D  <EMPTY>
E  <EMPTY>
F  <EMPTY>
G  <EMPTY>
H  <EMPTY>
F1 Edit name      F2 Edit command
F3 Re-order slots F5 Delete slot
F7 Quit

```

- **F1** enables renaming a menu slot. Choose slot to be renamed by pressing **0-9** or **A-Z**. Enter new name. Enter to confirm.

```

UBoot64: Boot Menu for Ultimate devices
Rename menu slots 2023/09/22 23:39:45

0  CBM Commander
1  Next Level (Demo)
2  GDos64
3  BluREU
4  BluREU 3D
5  C640S
6  <EMPTY>
7  <EMPTY>
8  <EMPTY>
9  <EMPTY>
A  <EMPTY>
B  <EMPTY>
C  <EMPTY>
D  <EMPTY>
E  <EMPTY>
F  <EMPTY>
G  <EMPTY>
H  <EMPTY>
Choose menu slot to be renamed. 0
Are you sure? Y/N y
Choose name for slot:
CBM Commander

```

- **F2** enables to add a user defined command. This enables to add a user defined command to be executed before the program in the slot is started. Can be any valid BASIC command.

This gives this screen:

```
UBoot64: Boot Menu for Ultimate devices
Edit command 2023/09/22 23:40:18

Chosen slot:
1 Next Level (Demo)

Enter command (empty=none):

```

- **F3** enables re-ordering menu slots. Choose slot to be re-ordered by pressing **0-9** or **A-Z**. Selected menu slot is highlighted white. Move option by pressing **UP** or **DOWN**. Confirm by **ENTER**. Cancel with **F7**.

```
UBoot64: Boot Menu for Ultimate devices
Re-order menu slots 2023/09/22 23:40:43

0 CBM Commander
1 Next Level (Demo)
2 GDos64
3 BluREU
4 BluREU 3D
5 C640S
6 <EMPTY>
7 <EMPTY>
8 <EMPTY>
9 <EMPTY>
A <EMPTY>
B <EMPTY>
C <EMPTY>
D <EMPTY>
E <EMPTY>
F <EMPTY>
G <EMPTY>
H <EMPTY>

Move slot up or down by cursor keys.
ENTER to confirm position, F7 to cancel.
```

- **F5** enables deleting a menu slot. Choose slot to be re-ordered by pressing **0-9** or **A\_Z**. Confirm by pressing **Y** for yes, or **N** for no.

```
UBoot64: Boot Menu for Ultimate devices
Delete menu slots 2023/09/22 23:41:16
```

```
0 CBM Commander
1 Next Level (Demo)
2 GDos64
3 BluREU
4 BluREU 3D
5 C640S
6 <EMPTY>
7 <EMPTY>
8 <EMPTY>
9 <EMPTY>
A <EMPTY>
B <EMPTY>
C <EMPTY>
D <EMPTY>
E <EMPTY>
F <EMPTY>
G <EMPTY>
H <EMPTY>
```

```
Choose menu slot to be deleted. 5
Are you sure? Y/N
```

- F7 takes you back to main menu. Changes made are saved only now.

## F5: NTP time config

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Enables editing the settings for automatically obtaining the actual time from an NTP server and setting the internal clock of the Ultimate II+ to this time.

After pressing F5, you arrive at this screen:

```
UBoot64: Boot Menu for Ultimate devices
Configuration tool. 2023/09/22 23:41:47
```

```
Present configuration settings:
```

```
NTP time update settings:
- Update on boot toggle: On
- Offset to UTC in seconds: 7200
- NTP server hostname:
pool.ntp.org
```

```
Make your choice:
```

```
F1 Toggle update on boot on/off
F3 Edit time offset to UTC
F5 Edit NTP server host
F7 Back to main menu
```

The screens shows you the present settings and allows you to edit them.

- **F1** Toggles to enable or disable updating UII+ time from an NTP server at boot. Default: Enabled.
- **F3** Edits the time offset to UTC (Universal standard time). The offset needs to provided in seconds. Automated adjustment for daylight savings ('Summer' and 'Winter' time) is not provided, so you have to adjust your offset on the change from daylight saving time to not. Example: Central European Time requires an offset of 3600, Central European Summer Time of 7200. See <https://www.timeanddate.com/time/zones/> for all offsets in hours (multiply by 3600 to get to seconds). Default: 0 (=UTC).
- **F5** Edits the NTP time server to be used. It defaults on pool.ntp.org, but you can specify your own if you want.
- **F7** Back to main menu

## F7: Quit to BASIC

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Exit the bootmenu to the BASIC Ready prompt. Memory will be erased on exit.

## Credits

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### UBoot64

Boot menu for C64 Ultimate enabled devices

Written in 2023 by Xander Mol

<https://github.com/xahmol/UBoot64>

<https://www.idreamtin8bits.com/>

Inspired by and code used from DraBrowse:

DraBrowse (db\*) is a simple file browser.

Originally created 2009 by Sascha Bader.

Used version adapted by Dirk Jagdmann (doj)

<https://github.com/doj/dracopy>

Most of code and functionality ported from:

DMBoot 128:

Device Manager Boot Menu for the Commodore 128

Written in 2020-2023 by Xander Mol

<https://github.com/xahmol/DMBoot>

Additionally uses code from:

- Ultimate 64/II+ Command Library  
Scott Hutter, Francesco Sblendorio  
<https://github.com/xlar54/ultimateii-dos-lib>
- GenCart64 - cc65 Library for C64 cartridges  
Joseph Rose, a.k.a. Harry Potter  
<https://sourceforge.net/projects/cc65extra/files/memory%20cfgs/>  
Used for inspiration for building C64 cartridge image with CC65

- Sidekick64 by frntc  
<https://github.com/frntc/Sidekick64/blob/master/Source/Firmware/C64Side/cart.a>  
Used as inspiration for cartridge init and exit code
- UUC based on Final Cartridge III by Bart van Leeuwen / bvl1999  
[https://github.com/bvl1999/final\\_cartridge/blob/master/core/init.s](https://github.com/bvl1999/final_cartridge/blob/master/core/init.s)  
Used for inspiration for building C64 cartridge image with CC65  
Also help with ideas, feedback, error solving, testing and code snippets
- ntp2ultimate by MaxPlap  
<https://github.com/MaxPlap/ntp2ultimate>  
Time via NTP code
- EPOCH-to-time-date-converter by sidsingh78  
[https://github.com/sidsingh78/EPOCH-to-time-date-converter/blob/master/epoch\\_conv.c](https://github.com/sidsingh78/EPOCH-to-time-date-converter/blob/master/epoch_conv.c)
- petcom version 1.00 by Craig Bruce, 18-May-1995  
Convert from PETSCII to ASCII, or vice-versa.  
[https://codebase64.org/doku.php?id=source\\_conversion](https://codebase64.org/doku.php?id=source_conversion)

Requires and made possible by the Ultimate II+ cartridge,

Created by Gideon Zweijtzer

<https://ultimate64.com/>

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