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## Convertron3000

Convertron3000 is a graphics converter for Commodore 64 computers. It runs on 64 bit versions of Linux, MacOS, Windows and other systems supported by Python.

## Why Convertron3000?

reason	description
open source	easy to modify and to improve, any useful contribution is highly welcome
portable	available on Linux, MacOS, Windows and any other system supported by Python3
instant preview	just fiddle around with the sliders and see the result before converting

## Usage

Using Convertron3000 is pretty straight-forward:

- Open some image.
- Adjust the sliders or apply an effect.
- Convert to koala or hires format.
- Save the resulting image.

## Brightness palette

Sometimes converted images look better when applying a palette based on brightness values.

- Select “brightness palette” mode.
- Choose one of the presets (“purple”, “brown” etc.).

You can also create your own palette like this:

- Edit the .json file: In the .json file you specify the size of your palette and the C64-colors like in one of the examples provided.
- Open your .json file. You find this option in the drop-down menu under “open custom gradient”.
- Choose “custom” as your brightness palette.

## File Formats

The multicolor bitmap is stored in the widely-spread KoalaPainter (.koa) format:

- 2 bytes load address
- 8000 bytes raw bitmap data
- 1000 bytes raw “Video Matrix” (screen) data
- 1000 bytes raw “Color RAM” data
- 1 byte background data

The hires bitmap is stored in the widely-spread Advanced Art Studio (.art) format:

- 2 bytes load address
- 8000 bytes raw bitmap data
- 1000 bytes raw “Video Matrix” (screen) data

## Authors

- fieserWoLF/Abyss-Connection - *initial work* - <https://github.com/fieserWoLF> <https://csdb.dk/scener/?id=3623>

Acknowledgments

- thanks to Green/ATW for spontaneously naming Convertron3000 :)
- thanks to people on csdb.dk for commenting and giving ideas how to improve

## Getting Started

Convertron3000 comes in two flavors:

- standalone executable for 64-bit systems Linux, MacOS/Darwin and Windows
- Python3 script

### Run the standalone executable

Just download your bundle and enjoy. Keep in mind that only 64bit systems are supported as I could not find a 32bit system to generate the bundle.

#### Note for Windows users

If some antivirus scanner puts Convertron3000 into quarantine because it suspects a trojan or virus, simply put it out there again. It isn't harmful, I used PyInstaller to bundle the standalone executable for you. Unfortunately, the PyInstaller bootloader triggers a false alarm on some systems. I even tried my best and re-compiled the PyInstaller bootloader so that this should not happen anymore. Keep your fingers crossed ;)

#### Note for MacOS users

Your system might complain that the code is not signed by a certificated developer. Well, I am not, so I signed the program on my own.

"Convertron3000" can't be opened because it is from an unidentified developer.

You need to right-click or Control-click the app and select "Open".

### Run the Python3 script directly

Download *convertron.py* and the whole *resource* - directory into the same folder on your computer.

#### Prerequisites

At least this is needed to run the script directly:

- python 3
- python tkinter module
- python "The Python Imaging Library" (PIL)

Normally, you would use pip like this:

```
pip install tk pillow
```

On my Debian GNU/Linux machine I use apt-get to install everything needed:

```
apt-get update  
apt-get install python3 python3-tk python3-pil
```

# Changelog

## Future plans

- ordered dithering: too high values in ordered dithering modes, slider to control dithering strength
- custom brightness palette editor

Any help and support in any form is highly appreciated.

If you have a feature request, a bug report or if you want to offer help, please, contact me:

<http://csdb.dk/scener/?id=3623> or [wolf@abyss-connection.de](mailto:wolf@abyss-connection.de)

## Changes in 1.1

- transfered whole code to Python3
- great speed improvement, converts much faster now
- new feature: specify image on the command-line, e.g. “`converter.py picture.jpg`”
- standalone executables for 64bit-systems: Linux, Darwin (MacOS) and Windows
- GUI design adjusted for MacOS/Darwin
- numpy library not used any more
- documentation
- custom brightness palette now uses .json format

## Changes in 1.01

- added licenses
- added to github with proper README.md

## Changes in 1.0

- hires mode
- colodore palette
- button: reset color modifiers to default
- start address now in hex
- custom brightness palette (config file)

## Changes in 0.1

- initial release

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<https://github.com/justmao945/lab/tree/master/halftoning/ordered-dithering>  
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