LCD/LED Marquees

Under construction.

Remember back in the physical arcades how game cabinets would proudly display the logo of the game they featured on the overhead billboards? Well, thanks to the aid of modern technology, it is now possible to replicate those banners! And since we're in Batocera, we can dynamically change those artworks to reflect the game that's being played at that current moment!

Pixelcade

The premier digital marquee manufacturers! Pixelcade has been integrated into Batocera since **v33**. Note that Pixelcade will still work with Batocera versions older than V33 with the limitation that Pixelcade will only update when a game has been launched vs. dynamically during scrolling through the Batocera front end.

Pixelcade themselves offer installation instructions over on their website

Supported platforms include:

- Raspberry Pi Zero 2
- Raspberry Pi 3
- Raspberry Pi 4
- x86_64
- Odroid N2+
- Theoretically, any aarch64/32 and/or x86_64 platform that supports Batocera **v33+**, but these have not been tested yet.

Pixelcade's software requires symlink and executable bit support in the filesystem it is installed to. This means you cannot install the software if the userdata is using FAT32, exFAT or NTFS.

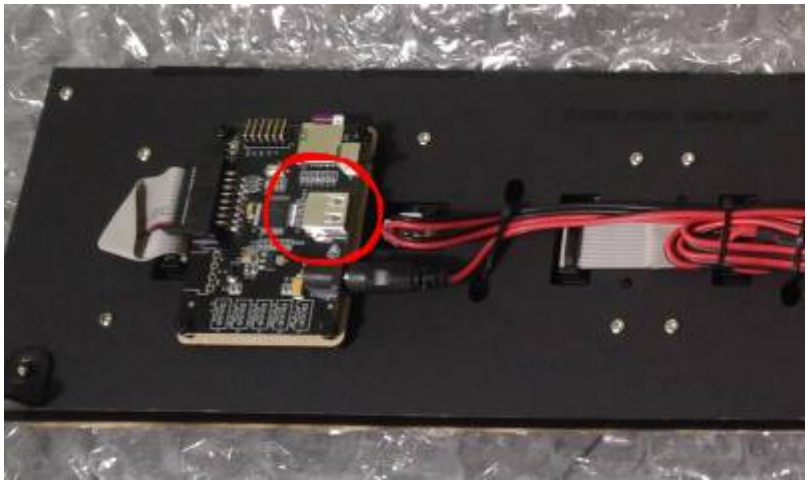
Pixelcade offer their marquees in two flavors, Pixelcade LED (8-bit, low-res) and Pixelcade LCD (high res). The installation instructions change depending on the model.

Pixelcade LED

This may change as Pixelcade gets better integrated into Batocera.

Pixelcade LED marquees are based on LED panels for a low-res 128×32 display suited for 8-bit, pixel art marquee artwork. Pixelcade and the community has created and updates the Pixelcade LED artwork which you can browse here https://github.com/alinke/pixelcade. While not every game has an associated pixel art marquee, you'll find most of the iconic games and consoles have matching, pixel perfect artwork. Pixelcade LED comes in 6 sizes https://pixelcade.org/mounting/ with mounts available for various arcade cabinets.

Installation is simple. Power on the Pixelcade panel and plug in its USB port into the Batocera machine:



Then SSH into Batocera and run the following:

bash

```
curl -kLO -H "Cache-Control: no-cache"
https://raw.githubusercontent.com/alinke/pixelcade-linux-builds/main/install-scripts/setup-batocera.sh && chmod +x setup-batocera.sh &&
./setup-batocera.sh
```

In case that doesn't work, the latest instructions for the LED panel can be found at https://pixelcade.org/batocerav2/

After the downloading and installation is complete, the 1941 game marquee will be displayed on the panel. Confirm the prompt in the terminal and reboot.

Pixelcade LCD

This may change as Pixelcade gets better integrated into Batocera.

This is the higher resolution LCD panel that's suited for high resolution marquee artwork in 1920 x 360 resolution. It supports Wi-Fi and sends its signals over the network instead of a USB cable. It is also possible to use an Ethernet connection in case a fully wired setup is preferred.

To setup your Pixelcade LCD, follow the instructions here https://pixelcade.org/lcdgen3/ and then SSH into Batocera and run the following:

bash

```
curl -kLO -H "Cache-Control: no-cache"
https://raw.githubusercontent.com/alinke/pixelcade-linux/main/installer
```

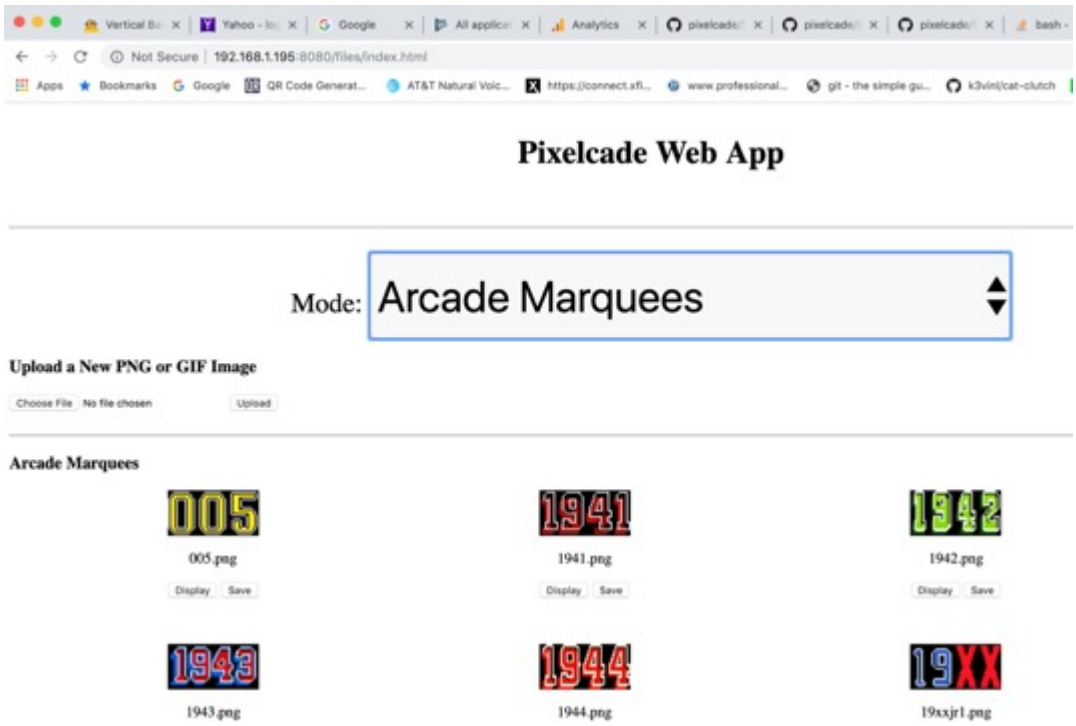
```
-scripts/setup-batocera-lcd.sh && chmod +x setup-batocera-lcd.sh &&
./setup-batocera-lcd.sh
```

In case that doesn't work, the latest instructions for the LCD panel can be found at https://pixelcade.org/batocera/

If you have both panels and want to use them at the same time, it is possible to install both these scripts at once.

Pixelcade Companion Web UI

A simple web interface can be used to upload new artwork to the panel's SD card. Visit http://batocera.local:8080 (if that doesn't work, use http://<IP of Batocera>:8080) to bring it up.



Pixelcade advanced scripting

Pixelcade has a sophisticated API that can be used to make the marquee perform certain actions. These can be programmed into the regular Batocera scripts if desired, but it might be easier to use EmulationStation's scripts instead. The ES scripts installed by Pixelcade's installer can be found in `/userdata/system/configs/emulationstation/scripts`.

For instance, here's a simplified routine that displays the game's marquee when a game is launched by Batocera (if it were installed into the `/userdata/system/configs/emulationstation/scripts/game-start` folder and marked as executable):

pixelcade.sh

```
#!/bin/bash

# Save the arguments into variables.
system="${1}"
rom="${2}"
romname="${3}"

# Convert an argument into another value.
if [[ "${system}" == "fbneo" ]]; then
        system="mame"
fi

# Switch case for certain systems.
case ${system} in
  fbneo)
    system="mame"
    ;;
  scummvm)
    rom="${rom%.*}"
    ;;
esac

# Execute this part every time this event triggers.
curl -G \
        --data-urlencode "t=${romname}" \
        http://127.0.0.1:8080/arcade/stream/${system}/`basename ${rom}`
```

If you wish to simply see the events that are being fired off by Pixelcade's EmulationStation scripts as you're navigating the menus, run the following in an SSH terminal:

```
killall java
/userdata/system/pixelcade/jdk/bin/java -jar -Dioio.Seriaorts=ttyACM0
/userdata/system/pixelcade/pixelweb.jar -b -e
```

Now you'll get the following debug output:

```
PixelIntegration is calling go()
[D/IOIOConnectionRegistry] Successfully added bootstrap class: ioio.lib.pc.SerialPortIOIOConne
ctionBootstrap
[D/SerialPortIOIOConnectionBootstrap] Adding serial port ttyACM0
[D/IOIOImpl] Waiting for connection to Pixelcade LED hardware
[V/IOIOImpl] Waiting for underlying connection
[V/IOIOImpl] Waiting for handshake
[I/IncomingState] IOIO Connection established. Hardware ID: PIXL0025 Bootloader ID: IOIO0401 F
irmware ID: PIXL0010
[V/IOIOImpl] Querying for required interface ID
[V/IOIOImpl] Required interface ID is supported
[I/IOIOImpl] PIXEL connection established
No Items in the Queue at Startup...
Found PIXEL: ioio.lib.impl.RgbLedMatrixImpl@5d73ee01
You may now interact with PIXEL!
LED matrix type is: 15
PIXEL Status: Connected
console handler received: /console/stream/psp/?event=FEScroll
STREAM MODE
Console Before Mapping: psp
Console Mapped: psp
# of Times to Loop: null
Looking for: /userdata/system/pixelcade/console\psp.png or .gif
PNG image found: file:/userdata/system/pixelcade/console/default-psp.png
console handler received: /console/stream/ps3/?event=FEScroll
console.csv file NOT FOUND
STREAM MODE
Console Before Mapping: ps3
Console Mapped: ps3
# of Times to Loop: null
Looking for: /userdata/system/pixelcade/console\ps3.png or .gif
GIF default console LED Marquee file not found, looking for default marquee: /userdata/system/
pixelcade/console/default-ps3.gif
PNG image found: file:/userdata/system/pixelcade/console/default-marquee.png
```

Using the two HDMI outputs on a RPi4

It is possible to use the two HDMI outputs on an RPi4, with one displaying Batocera and the other displaying the dynamic marquee. Link to the original forum post explaining this. Essentially, the Raspberry Pi draws images/videos directly to the framebuffer, which is still visible on the other display even though it's hidden by Batocera on the main display.

This has broken on **v34** and higher. Stay on **v33** or lower if you intend to use this.

Using two computers

Link to original forum post. Link to video demonstration.

This can be done using Batocera installed onto a device and another computer/Raspberry Pi connected to a separate display. So far, this has been tested successfully using Batocera installed on an x86_64 computer/Raspberry Pi with another Raspberry Pi acting as the marquee.

Troubleshooting

My Pixelcade LED/LCD panel isn't working!

Pixelcade takes a few more moments after ES has started before it “kicks in”.

If it's still not working, it could be that it's simply not plugged in correctly. Ensure that the USB cable on both ends is firmly secure in their ports (or if using the LCD panel, that it's paired to the same Wi-Fi network as Batocera). On the Batocera machine itself, it might be worth checking if it's functional on a different port (such as a USB 3.0 port if you were using a 2.0 port, or vice-versa).

If it's still not working, try out the following:

- If the Pixelcade software was installed before the 7th of February, 2022, a bug prevented the script from working on boot. The script at `/userdata/system/custom.sh` containing the Pixelcade instructions must be removed completely and then the installation run again. Choose “yes” to wanting to reinstall Pixelcade.
- The script can be called manually with

```
killall java && cd ~ && ./custom.sh
```

  - If the marquee starts working then the problem is that the script itself is failing to launch. Ensure that it contains `/userdata/system/jdk/bin/java -jar pixelweb.jar` at least twice in the file. If it does not, it is outdated and will not work.
  - If the marquee still does not work, then this is (likely) not the issue.
- A command can be sent to the marquee manually for testing purposes. For example:

```
~/jdk/bin/java -jar pixelcade.jar -m stream -c mame -g 1941
```

- If using Pixelcade LED (not Pixelcade LCD), run `ls /dev` and search for `ttyACM0` or `ttyACM1`. If neither are present, then your machine has not detected the Pixelcade LED device.

Further Pixelcade troubleshooting

Refer to Pixelcade's how to sections on resetting the firmware and visit the Pixelcade forums.