

*****Draft*****
09/18/20
lvgl
*****Draft*****

Forked https://github.com/cejasmamas/ultibo_lvgl

git clone https://github.com/develone/ultibo_lvgl.git

unzipped these 2 files lv_examples.zip lvgl.zip which provides the C sources.

I created a script compile.sh based on compile.bat

Rather than compiling everything when a change is made in ultiboClvg.c. I split the compile into 2 files. The first compiles most of the function /home/devel/Ultibo_Projects/ultibo_lvgl is done with "./compile.sh". This creates liblvgl.a. The liblvgl.a is copied to the RPi3 folder. The 2nd is done in /home/devel/Ultibo_Projects/ultibo_lvgl/RPi3 with "./compilelib.sh". The script copies liblvgl.a to libultiboClvg.a compiles and adds ultiboClvg.o

compile.sh

```
#!/bin/bash
rm -f *.o libultiboCgeneric.a
arm-none-eabi-gcc -O2 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -c ultiboClvg.c lvgl/src/lv_core/
*.c \
lvgl/src/lv_draw/*.c lvgl/src/lv_font/*.c lvgl/src/lv_gpu/*.c lvgl/src/lv_hal/*.c \
lvgl/src/lv_misc/*.c lvgl/src/lv_themes/*.c lvgl/src/lv_widgets/*.c \
lv_examples/src/lv_demo_printer/*.c lv_examples/src/lv_demo_printer/images/*.c \
lv_examples/src/lv_demo_benchmark/*.c lv_examples/assets/*.c
arm-none-eabi-ar rcs libultiboClvg.a *.o
arm-none-eabi-objdump -d libultiboClvg.a > libultiboClvg.txt
```

```
#!/bin/bash
rm -f *.o liblvgl.a RPi3/liblvgl.a
arm-none-eabi-gcc -O2 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -c lvgl/src/lv_core/*.c \
lvgl/src/lv_draw/*.c lvgl/src/lv_font/*.c lvgl/src/lv_gpu/*.c lvgl/src/lv_hal/*.c \
lvgl/src/lv_misc/*.c lvgl/src/lv_themes/*.c lvgl/src/lv_widgets/*.c \
lv_examples/src/lv_demo_printer/*.c lv_examples/src/lv_demo_printer/images/*.c \
lv_examples/src/lv_demo_benchmark/*.c lv_examples/assets/*.c \
lv_examples/src/lv_demo_widgets/*.c lv_examples/src/lv_ex_widgets/*.c \
lv_examples/src/lv_ex_get_started/*.c
arm-none-eabi-ar rcs liblvgl.a *.o
arm-none-eabi-ar t liblvgl.a > liblvgl_obj.txt
arm-none-eabi-objdump -d liblvgl.a > liblvgl_disasm.txt
cp liblvgl.a RPi3/
rm -f *.o
```

compilelib.sh

```
#!/bin/bash
```

```
rm -f *.o libultiboClvgl.a
arm-none-eabi-gcc -O2 -mabi=aapcs -marm -march=armv7-a -mfpu=vfpv3-d16 \
-mfloat-abi=hard -D__DYNAMIC_REENT__ -I libtess2/Include/ -I./ -c ultiboClvgl.c
cp liblvgl.a libultiboClvgl.a
arm-none-eabi-ar rcs libultiboClvgl.a ultiboClvgl.o
arm-none-eabi-ar t libultiboClvgl.a > libultiboClvgl_obj.txt
arm-none-eabi-objdump -d libultiboClvgl.a > libultiboClvgl_disasm.txt
```

Project needed a fix.

```
git remote add upstream https://github.com/cejasmamas/ultibo\_lvgl
```

```
git fetch upstream
```

```
git merge upstream/master
```

```
git push origin master
```

```
https://github.com/develone/Ultibo\_Projects/tree/master/ultibo\_lvgl
```

```
git clone https://github.com/develone/Ultibo\_Projects.git
```

```
cd Ultibo_Projects/ultibo_lvgl
```

```
unzip lv_examples.zip
```

```
unzip lv_examples.zip
```

```
~/Ultibo_Projects/ultibo_lvgl/
./compile.sh
```

```
~/Ultibo_Projects/ultibo_lvgl/RPi3
libultiboClvgl.a
```

```
File Edit Search View Source Project Run Tools Window Help

ultibolvgl

function NonBlockingMouse(Parameter:Pointer):PtrInt;
  ConsoleWindowWriteLn(WindowHandle, '');
.
.
  ConsoleWindowWriteLn (WindowHandle, 'Local Address ' + IPAddress);
  SetOnMsg (@Msg);
  {Create and start the HTTP Listener for our web status page}
185  HTTPListener:=THTTPListener.Create;
  HTTPListener.Active:=True;
  {Register the web status page, the "Thread List" page will allow us to see what is happening in the example}
  WebStatusRegister(HTTPListener, '', True);
  {Wait a couple of seconds for C:\ drive to be ready}
190  ConsoleWindowWriteLn(WindowHandle, 'Waiting for drive C:\');
  while not DirectoryExists('C:\') do
  begin
    {Sleep for a second}
    Sleep(1000);
  end;
195  ConsoleWindowWriteLn(WindowHandle, 'C:\ drive is ready');
  ConsoleWindowWriteLn(WindowHandle, '');
198  ScreenWidth := FramebufferProperties.PhysicalWidth;
```

Run/Compile

```
File Edit Search View Source Project Run Tools Window Help

ultibolvgl.lpr

function NonBlockingMouse(Parameter:Pointer):PtrInt;
  ConsoleWindowWriteLn(WindowHandle, '');
.
.
  ConsoleWindowWriteLn (WindowHandle, 'Local Address ' + IPAddress);
  SetOnMsg (@Msg);
  {Create and start the HTTP Listener for our web status page}
185  HTTPListener:=THTTPListener.Create;
  HTTPListener.Active:=True;
  {Register the web status page, the "Thread List" page will allow us to see what is happening in the example}
  WebStatusRegister(HTTPListener, '', True);
  {Wait a couple of seconds for C:\ drive to be ready}
190  ConsoleWindowWriteLn(WindowHandle, 'Waiting for drive C:\');
  while not DirectoryExists('C:\') do
  begin
    {Sleep for a second}
    Sleep(1000);
  end;
195  ConsoleWindowWriteLn(WindowHandle, 'C:\ drive is ready');
  ConsoleWindowWriteLn(WindowHandle, '');
198  ScreenWidth := FramebufferProperties.PhysicalWidth;
```

```
198: 1      INS    /home/devel/Ultilbo_Projects/ultibo_lvgl/RPI3/ultibolvgl.lpr

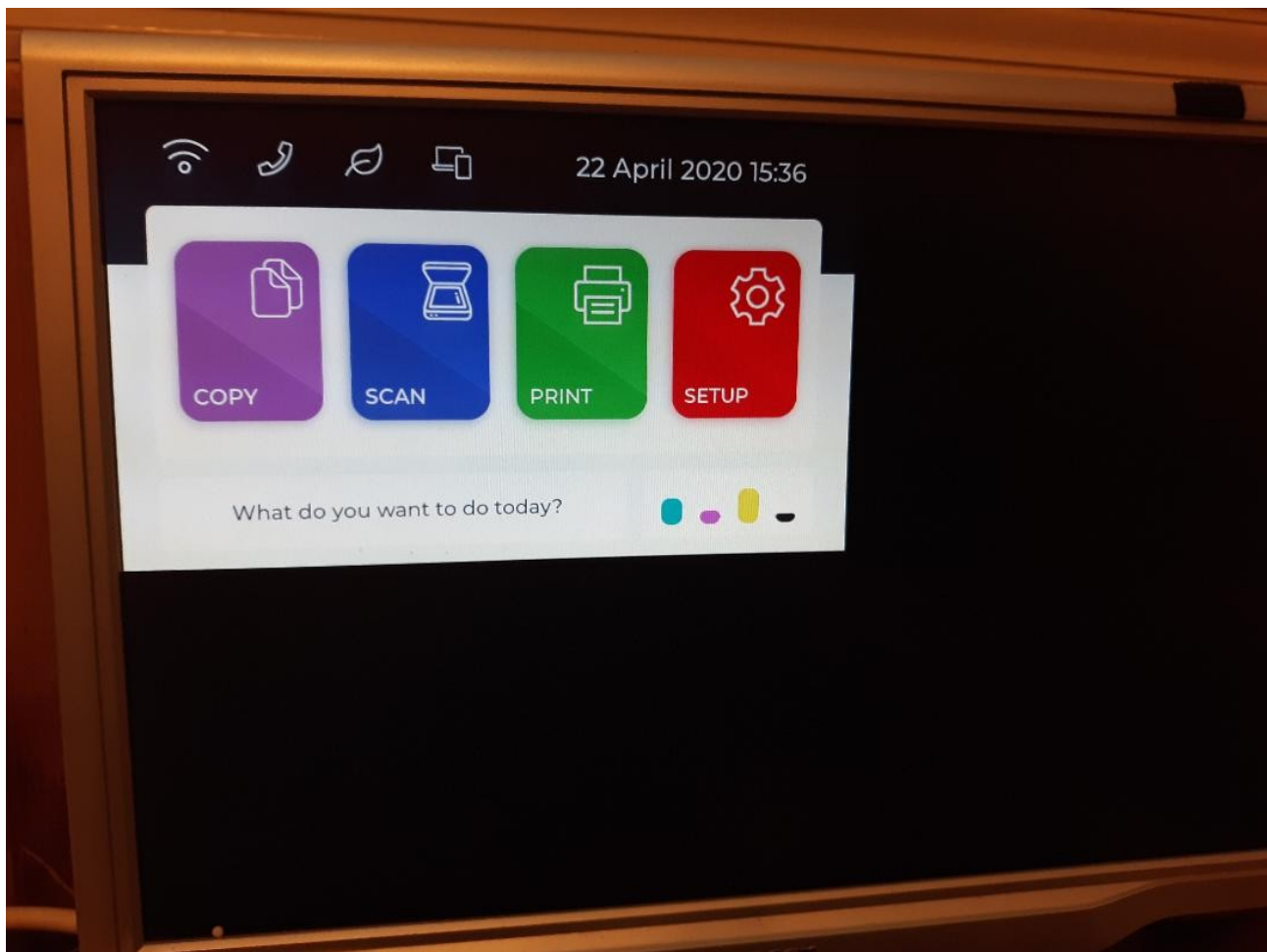
Compile Project, OS: ultibo, Target: ultibolvgl, Success, Hints: 12
ultibolvgl.lpr(192,21) Hint: Parameter "Parameter" not used
ultibolvgl.lpr(302,17) Hint: Conversion between ordinals and pointers is not portable
ultibolvgl.lpr(307,72) Hint: Variable "ThreadMouseHandle" does not seem to be initialized
ultibolvgl.lpr(49,2) Note: Local variable "MyPLoggingDevice" not used
ultibolvgl.lpr(52,2) Note: Local variable "TCP" not used
ultibolvgl.lpr(112,12) Hint: Local proc "getScreenPitch" is not used
ultibolvgl.lpr(117,12) Hint: Local proc "getScreenBuffer" is not used
ultibolvgl.lpr(122,13) Hint: Local proc "getKey" is not used
ultibolvgl.lpr(139,12) Hint: Local proc "getScreenSize" is not used
ultibolvgl.lpr(145,12) Hint: Local proc "getMouseXY" is not used
```

Green bar compile & link successful.

tftp 192.168.1.245 < cmdstftp

tftp> tftp> Sent 5044228 bytes in 27.4 seconds

After the reboot.



Remote shell

```
File Edit Tabs Help
Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)
(Type HELP for a list of available commands)
>
```

Remote shell help

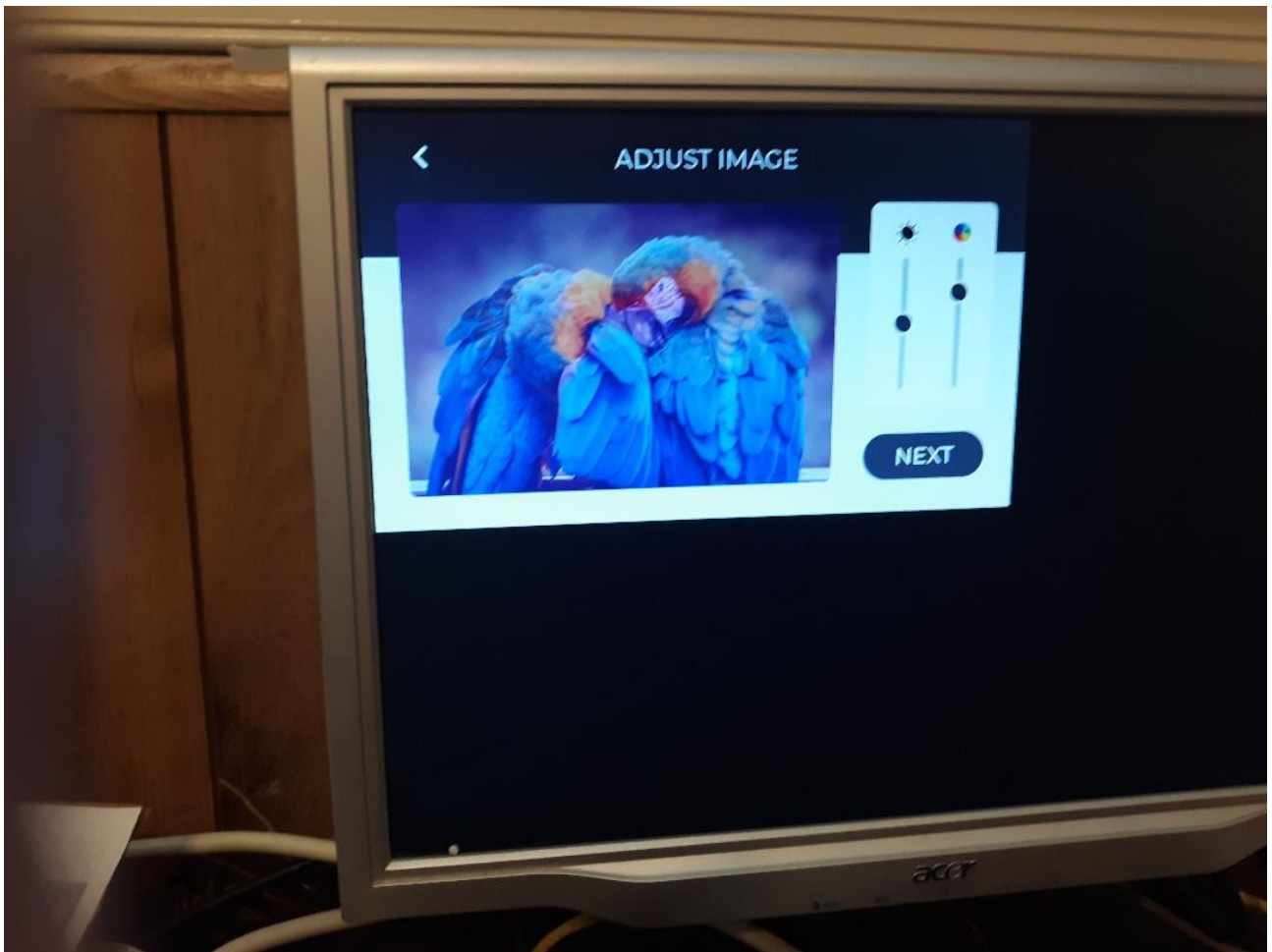
```
File Edit Tabs Help
Connected to 192.168.1.245.
Escape character is '^['.

Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)
(Type HELP for a list of available commands)
Available commands:
HELP
INFO
VER
TIME
CLS
RESTART
SHUTDOWN
UPTIME
THREAD
MEMORY
DEVICE
FILESYSTEM
CONTROLLER
DISK
PARTITION
VOLUME
DRIVE
CACHE
DIR
CD
MD
RD
TYPE
COPY
MOVE
DEL
REN
ATTRIB
TOUCH
VOL
LABEL
DELTREE
XCOPY
UPDATE
LOGOUT
>
```

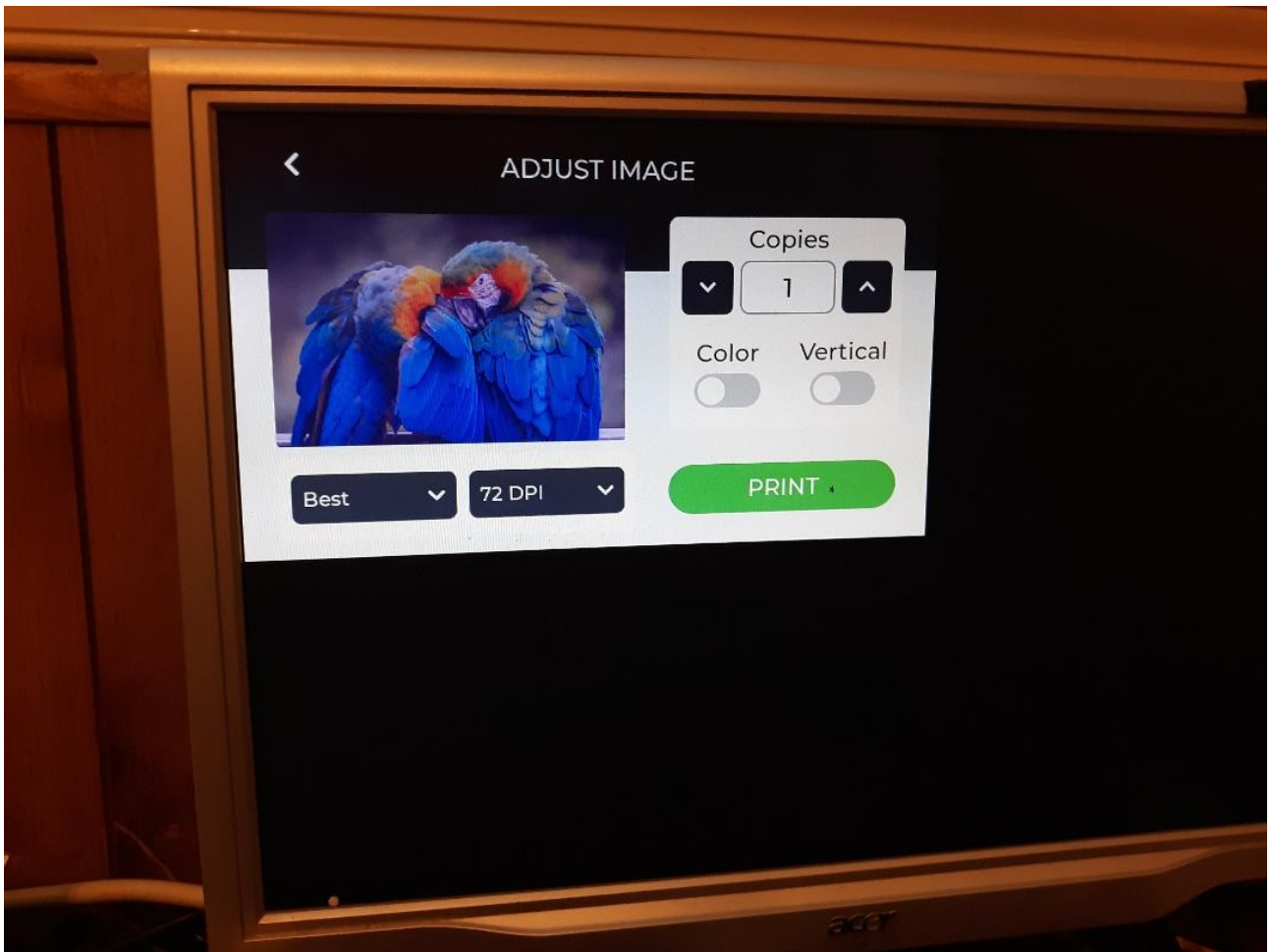
Depress Settings



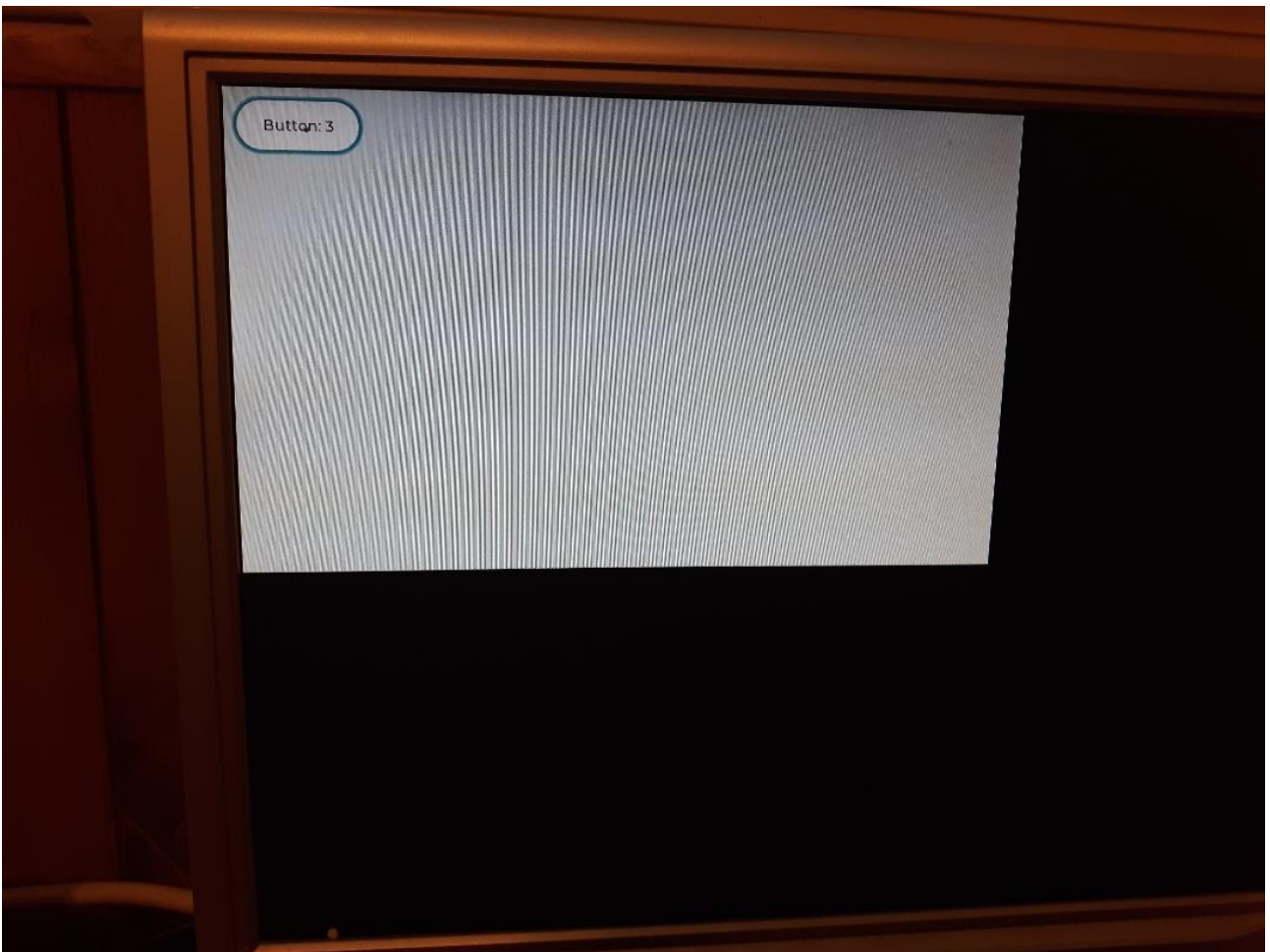
Depress Copy



Depress Next



Modifying ultiboClvgl.c commenting `lv_demo_printer();` and adding `lv_ex_get_started_1();`.



When the Button is depressed with left mouse button the number increaes.

(218 unread) - develop

cejasmamas/ultibo_lv

LVGL - ultibo.org

Yahoo Finance - Stock

Ultibo Core (Release: Beetr

192.168.1.245/status

...

☆

Ultibo Core (Release: Beetr Version: 2.0.807 Date: 3 September 2020)

General

Platform

Memory

Heap Blocks

CPU

FPU

GPU

RTL

Clock

Locale

Threading

Thread List

Scheduler

Devices

Drivers

Handles

USB

MMC / SD

Network

Storage

Filesystem

Disk Cache

Keyboard

Mouse

Framebuffer

Environment

Page Tables

Vector Tables

IRQ / FIQ / SWI

Configuration

General

Release Name: Beetr

Release Version: 2.0.807

Release Date: 3 September 2020

Time (Local): 17-9-20 16:58:21

Time (UTC): 17-9-20 16:58:21

Timezone: UTC

Daylight Start: None

Daylight Date: N/A

Standard Start: None

Standard Date: N/A

Uptime: 0 days 00:00:57

web cpu

(218 unread) - develon

cejasmamas/ultibo_lv

LVGL - ultibo.org

Yahoo Finance - Stock

Ultibo Core (Release: Beetr

192.168.1.245/status/cpu

Ultibo Core (Release: Beetroot Version: 2.0.807 Date: 3 September 2020)

General

Platform

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IRQ / FIQ / SWI

Configuration

CPU

CPU Arch: CPU_ARCH_ARM32

CPU Type: CPU_TYPE_ARMV8

CPU Model: CPU_MODEL_CORTEX_A53

CPU Revision: 0x00000004

CPU Description: ARM Cortex-A53 MPCore

CPU Boot: CPU_ID_0

CPU Mask: 0x0000000F

CPU Count: 4

CPU Mode: 0x0000001F

CPU Group: CPU_GROUP_0

CPU Current: CPU_ID_3

CPU Memory: Address: 0x00000000

Size: 939524096

CPU Utilization: CPU_ID_0: 2.5%

CPU_ID_1: 0.7%

CPU_ID_2: 0.6%

CPU_ID_3: 78.4%

System Utilization (Average): 20.5%

L1 Cache Type: CACHE_TYPE_SEPARATE

L1 Data Cache Size: 32768

L1 Instruction Cache Size: 32768

L1 Data Cache Line Size: 64

L1 Instruction Cache Line Size: 64

L2 Cache Type: CACHE_TYPE_UNIFIED

L2 Cache Size: 524288

L2 Cache Line Size: 64