

# Python Sur STM32



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# Environnement

**Objectif : une chaîne de compilation du langage Python STM32F4**

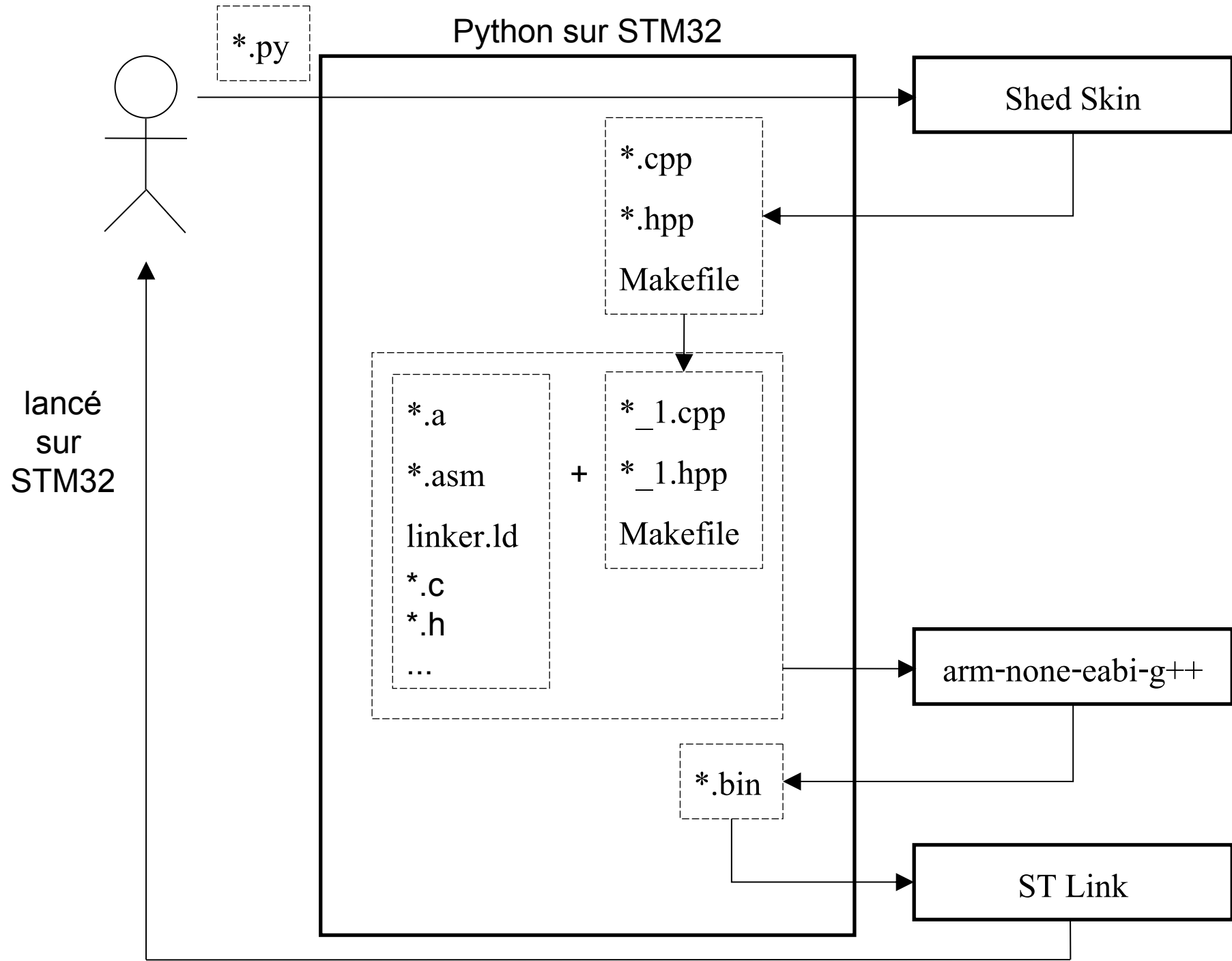
**Système : Linux**

**Shedskin : la traduction vers C++**

**GNU/ARM : la compilation**

**ST-link : le téléchargement**

**STM32PLUS : utiliser son librairie pour supporter le STL**



# Utilisation

```
[py2stm]$ ./py2stm.tcl -a asd
Error: Unknown argument: -a

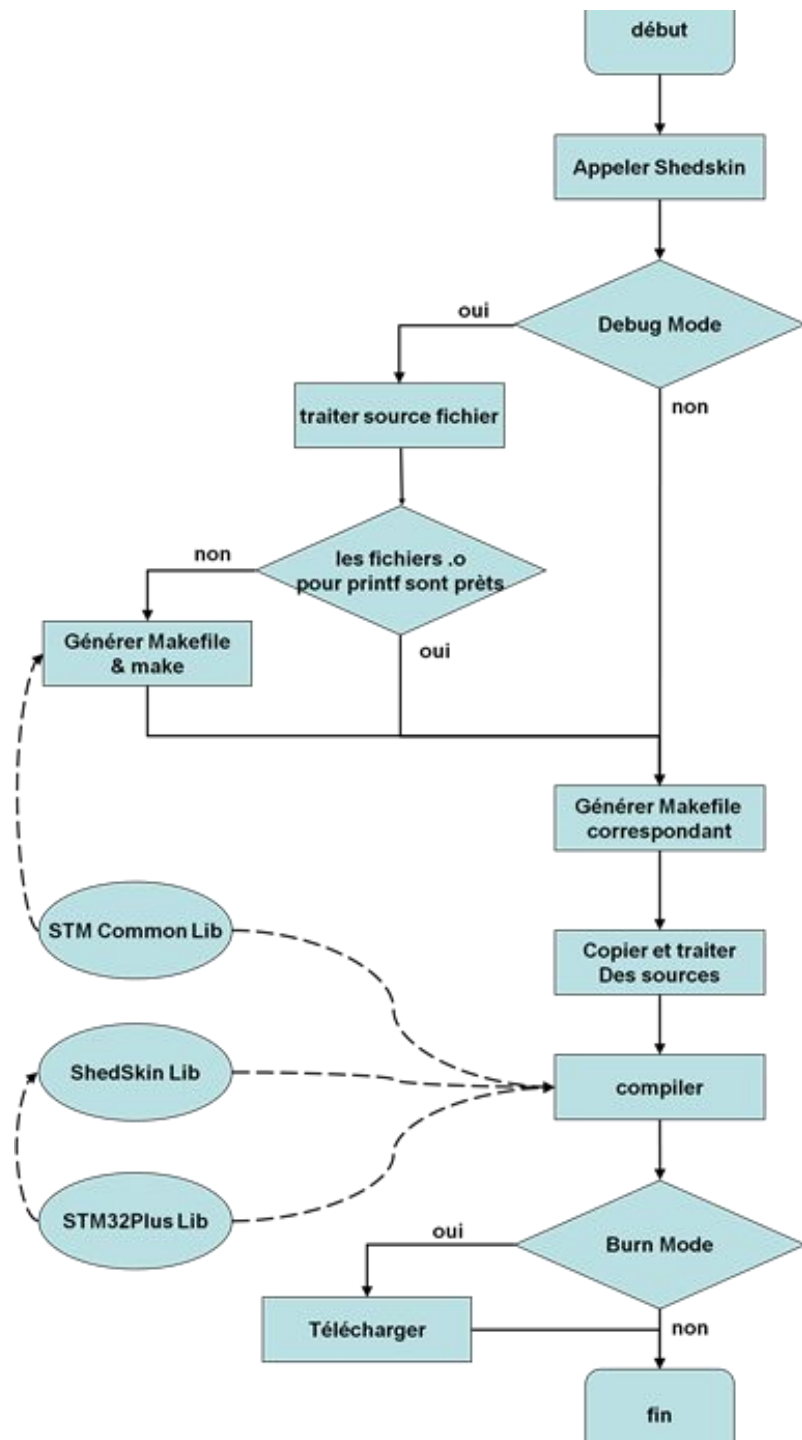
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          RICH Project : Python sur STM32
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Usage: py2stm.tcl [-d] [-b]-p py_file

Example: py2stm.tcl -d -p /home/share/test.py
```

# Structure des fichiers

```
[projet]$ ls
LibraryHacks.cpp  print  py2stm.tcl  README  shedskin_lib  Startup.asm  stm32_flash.ld  System.c
```



## Traitement du source

throw(...);

//throw...

ASSERT(...);

//ASSERT

try {

//try {

...

...

} catch {

-->

//} catch {

...

//...

}

//}

print2(...);

//pirnt2...

```

[py2stm]$ ./py2stm.tcl -p ./test/1.py -b
Translating...
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[analyzing types..]

0%
*****100%
*****100%
*****100%
[generating c++ code..]
[elapsed time: 2.27 seconds]
Treating Source Files...
New Project Creating...
Compiling...

~/lib/gcc-arm-none-eabi-4_7-2013q2/bin/arm-none-eabi-g++ -o ./re.o -c -peda
tics -pipe -ffunction-sections -fdata-sections -fno-exceptions -mthumb -gdw
2PLUS_F4 -Os -I/home/xavier/project/stm32/stm32plus/lib/include -I/home/xav
vier/project/stm32/stm32plus/lib -I. -I/home/xavier/ricm/mul_projet/py2stm/
dskin_lib/builtin /home/xavier/ricm/mul_projet/py2stm/shedskin_lib/re.cpp
~/lib/gcc-arm-none-eabi-4_7-2013q2/bin/arm-none-eabi-g++ -o ./builtin.o -c
e-statics -pipe -ffunction-sections -fdata-sections -fno-exceptions -mthumb
DSTM32PLUS_F4 -Os -I/home/xavier/project/stm32/stm32plus/lib/include -I/hor
me/xavier/project/stm32/stm32plus/lib -I. -I/home/xavier/ricm/mul_projet/py
m/shedskin_lib/builtin /home/xavier/ricm/mul_projet/py2stm/shedskin_lib/bu
~/lib/gcc-arm-none-eabi-4_7-2013q2/bin/arm-none-eabi-g++ -o ./1.o -c -pedar
ics -pipe -ffunction-sections -fdata-sections -fno-exceptions -mthumb -gdw
PLUS_F4 -Os -I/home/xavier/project/stm32/stm32plus/lib/include -I/home/xav
ier/project/stm32/stm32plus/lib -I. -I/home/xavier/ricm/mul_projet/py2stm/s

```

```

~/lib/gcc-arm-none-eabi-4_7-2013q2/bin/arm-none-eabi-objcopy
Burning...

/home/xavier/lib/stlink/st-flash write 1.bin 0x8000000

Flash page at addr: 0x08000000 erased
Flash page at addr: 0x08004000 erased
Flash page at addr: 0x08008000 erased
size: 32768
size: 8128
2014-03-09T09:52:46 INFO src/stlink-common.c: Loading device
2014-03-09T09:52:46 INFO src/stlink-common.c: Device connect
2014-03-09T09:52:46 INFO src/stlink-common.c: SRAM size: 0x3
384 bytes
2014-03-09T09:52:46 INFO src/stlink-common.c: Attempting to
EraseFlash - Sector:0x0 Size:0x4000
EraseFlash - Sector:0x1 Size:0x4000
EraseFlash - Sector:0x2 Size:0x4000
2014-03-09T09:52:47 INFO src/stlink-common.c: Finished erasi
2014-03-09T09:52:47 INFO src/stlink-common.c: Starting Flash
2014-03-09T09:52:47 INFO src/stlink-common.c: Successfully l
2014-03-09T09:52:48 INFO src/stlink-common.c: Starting verif
2014-03-09T09:52:49 INFO src/stlink-common.c: Flash written
[py2stm]$ █

```

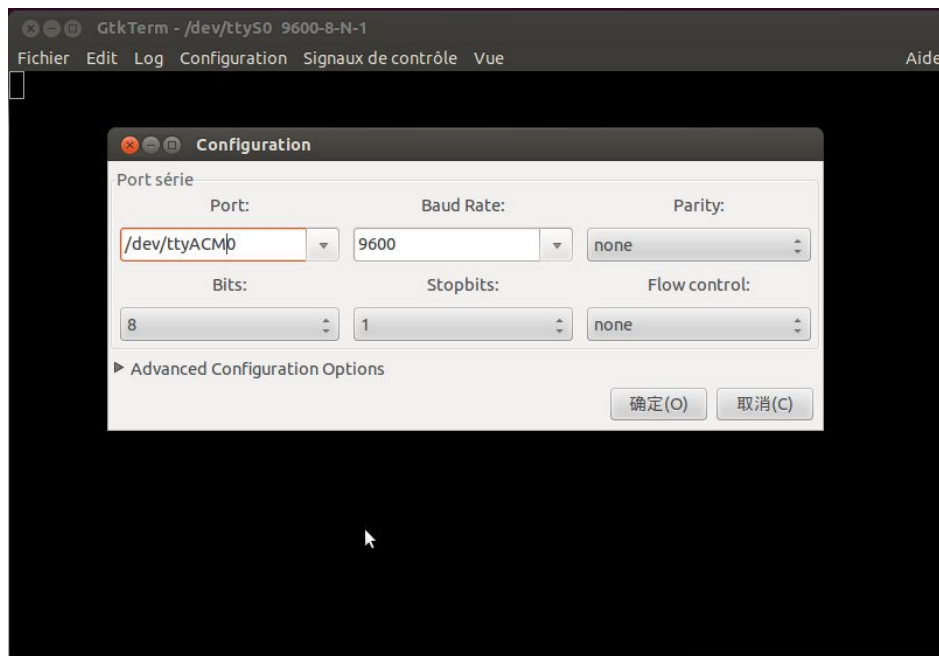
# Modification du librairie

GC, PCRE, Exception, exit() & IO & File, Head files



# Utilisation du printf

```
[dev]$ ls
alarm          dvdrw          loop6          ram0           rtc            tty1           tty26          tty42          tty59          ttyS15         ttyS31         vcsa
ashmem         encryptfs     loop7          ram1           rtc0           tty10          tty27          tty43          tty6           ttyS16         ttyS4          vcsa1
autofs         fb0           loop-control  ram10          sda            tty11          tty28          tty44          tty60          ttyS17         ttyS5          vcsa2
binder         fd            mapper        ram11          sda1           tty12          tty29          tty45          tty61          ttyS18         ttyS6          vcsa3
block          full          mcelog        ram12          sda2           tty13          tty3           tty46          tty62          ttyS19         ttyS7          vcsa4
bsg            fuse          mei           ram13          sda3           tty14          tty30          tty47          tty63          ttyS2          ttyS8          vcsa5
btrfs-control hidraw0       mem           ram14          serial         tty15          tty31          tty48          tty7           ttyS20         ttyS9          vcsa6
bus            hidraw1       net           ram15          sg0            tty16          tty32          tty49          tty8           ttyS21         uinput        vga_arbiter
cdrom          hpet          network_latency ram2           sg1            tty17          tty33          tty5           tty9           ttyS22         urandom       vhost-net
cdrw           input         network_throughput ram3           shm            tty18          tty34          tty50          ttyACM0        ttyS23         usb           video0
char           kmsg         null          ram4           snapshot       tty19          tty35          tty51          ttyprintk      ttyS24         v4l           zero
console        log          nvram         ram5           snd            tty2           tty36          tty52          ttyS0          ttyS25         vcs           vcs1
core           loop0         oldmem        ram6           sr0            tty20          tty37          tty53          ttyS1          ttyS26         vcs1          vcs2
cpu            loop1         port          ram7           stderr         tty21          tty38          tty54          ttyS10         ttyS27         vcs2          vcs3
cpu_dma_latency loop2         ppp           ram8           stdin          tty22          tty39          tty55          ttyS11         ttyS28         vcs3          vcs4
disk           loop3         psaux        ram9           stdout         tty23          tty4           tty56          ttyS12         ttyS29         vcs4          vcs5
dri            loop4         ptmx         random         tty            tty24          tty40          tty57          ttyS13         ttyS3          vcs5          vcs6
dvd            loop5         pts          rkill         tty0           tty25          tty41          tty58          ttyS14         ttyS30         vcs6
```



# Évaluation

117 fichiers (.py) : réussi

10 fichiers (.py) : `_times()` , `_times_r()` et `_gettimeofday()`.

14 fichiers (.py) : des fonctions sur le iostream du fichier

13 fichiers (.py) :Shedskin ne supporte pas des caractéristiques utilisé

12 fichiers (.py) :On n'a pas pu supporté

```
[py2stm]$ ./py2stm.tcl -p test/39.py
Translating...
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*ERROR* 39.py:2: cannot locate module: testdata
child process exited abnormally
[py2stm]$
```