

*****Draft*****
ultibo & C
07/10/21
*****Draft*****

When a Ultibo Lazarus Bare Metal project has similar lines below you need to create a lib.

```
{ $linklib svd }
```

```
procedure test_svd; cdecl; external 'libsvd' name 'test_svd';
```

If the library is not present the project will not compile.

Example th_svd requires libsvd.a which is created using ./buildlib.sh found below.

```
/home/devel/Ultibo_Projects/th_svd/RPi2
```

```
/home/devel/Ultibo_Projects/th_svd/RPi3
```

```
/home/devel/Ultibo_Projects/th_svd/RPi4
```

```
disp_mat.o
```

```
error.o
```

```
mul_mat.o
```

```
mythread.o
```

```
pnmio.o
```

```
svd.o
```

```
trans_mat.o
```

```
ultibo_th_svd.o
```

Script buildlib.sh

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

```
#export PATH=/home/devel/ultibo/core/fpc/bin:$PATH
```

```
rm -f *.o
```

```
rm -f libsvd.a
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c svd.c -o svd.o
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c disp_mat.c -o disp_mat.o
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c trans_mat.c -o trans_mat.o
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c mul_mat.c -o mul_mat.o
```

```
arm-none-eabi-gcc -D_POSIX_THREADS -lpthread -I../include -O3 -mabi=aapcs -marm -  
march=armv7-a -mfpv3-d16 -mfloat-abi=hard -c mythread.c -o mythread.o
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c pnmio.c -o pnmio.o
```

```
arm-none-eabi-gcc -I../include -O3 -mabi=aapcs -marm -march=armv7-a -mfpv3-d16 -  
mfloat-abi=hard -c error.c -o error.o
```

```
echo "Compiling example ultibo_th_svd "
```

```
arm-none-eabi-gcc -DUltibo -D_POSIX_THREADS -lpthread -I../include -O3 -mabi=aapcs -marm -  
march=armv7-a -mfpv3-d16 -mfloat-abi=hard -c master.c -o ultibo_th_svd.o
```

```
#gcc test_svd.c svd.o disp_mat.o -lm -o test_svd
```

```
arm-none-eabi-ar rcs libsvd.a *.o
```

```
arm-none-eabi-ar -t libsvd.a > libsvd_obj.txt
```

```
#fpc -vi -B -Tultibo -Parm -CpARMV7A -WpRPI3B @/home/devel/ultibo/core/fpc/bin/RPI3.CFG  
-O4 svd_FS_RPi3.lpr
```

To use the same code running Linux and running Bare Metal in the file master.c a #if is used.

```
#ifdef Ultibo
```

```
void test_svd() {
```

```
#else
```

```
void main() {
```

```
#endif
```

Ultibo_Projects/th_svd/RPi4/master.c svd_rgb/src/master.c