

```
sarika@Sarikas-MacBook-Pro Dev_Drv % scons
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
python /Users/sarika/workspace/Dev_Drv/site_scons/site_tools/unittest/unit_test_runner.py --summary-only --timeout=5 -i /Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/test/test_app_cli/test_app_cli.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/test/test_periodic_scheduler/test_periodic_scheduler.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/test/test_sl_string/test_sl_string.exe
+-----+
| Unit Test Operation Summary |
+-----+
| Name | Result |
+-----+
| test_app_cli | PASSED |
| test_periodic_callbacks | PASSED |
| test_periodic_scheduler | PASSED |
| test_sl_string | PASSED |
+-----+
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
text data bss dec hex filename
47260 852 4072 52184 cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv %
```

```
sarika@Sarika-MacBook-Pro Dev_Drv % scons --project=lpc48xx_freertos
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
python /Users/sarika/workspace/Dev_Drv/site_scons/site_tools/unittest/unit_test_runner.py --summary-only --timeout=5 -i /Users/sarika/workspace/Dev_Drv/_build_lpc48xx_freertos/test/test_app_cli/test_app_cli.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc48xx_freertos/test/test_periodic_callbacks/test_periodic_callbacks.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc48xx_freertos/test/test_periodic_scheduler/test_periodic_scheduler.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc48xx_freertos/test/test_sl_string/test_sl_string.exe
=====
| Unit Test Operation Summary |
|-----|
| Name | Result |
|-----|
| test_app_cli | PASSED |
| test_periodic_callbacks | PASSED |
| test_periodic_scheduler | PASSED |
| test_sl_string | PASSED |
|-----|
are-none-emb-size --format=berkeley _build_lpc48xx_freertos/lpc48xx_freertos.elf
text data bss dec hex filename
47268 852 4872 52184 c0d8 _build_lpc48xx_freertos/lpc48xx_freertos.elf
scons: done Building Targets.
```

```
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss     dec     hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test --project=lpc40xx_freertos
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss     dec     hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
```

```
sarika@Sarikas-MacBook-Pro Dev_Drv % scons -c
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
Clang formatting: [lpc40xx_freertos/l5_application/main.c]
scons: done reading SConscript files.
scons: Cleaning targets ...
Removed _build_lpc40xx_freertos/auto_generated/project.h
Removed _build_lpc40xx_freertos/test/obj/sl_string.o
Removed _build_lpc40xx_freertos/test/obj/unity.o
Removed _build_lpc40xx_freertos/test/obj/cmock.o
Removed _build_lpc40xx_freertos/test/obj/cexception.o
Removed _build_lpc40xx_freertos/test/test_app_cli/test_app_cli_runner.c
Removed _build_lpc40xx_freertos/test/test_app_cli/obj/test_app_cli_runner.o
Removed _build_lpc40xx_freertos/test/test_app_cli/obj/test_app_cli.o
Removed _build_lpc40xx_freertos/test/test_app_cli/test_app_cli.exe
Removed _build_lpc40xx_freertos/test/obj/periodic_callbacks.o
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/mock/Mockboard_io.h
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/mock/Mockboard_io.c
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/obj/Mockboard_io.o
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/mock/Mockgpio.h
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/mock/Mockgpio.c
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/obj/Mockgpio.o
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/test_periodic_callbacks_runner.c
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/obj/test_periodic_callbacks_runner.o
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/obj/test_periodic_callbacks.o
Removed _build_lpc40xx_freertos/test/test_periodic_callbacks/test_periodic_callbacks.exe
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/mock/Mockperiodic_callbacks.h
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/mock/Mockperiodic_callbacks.c
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/obj/Mockperiodic_callbacks.o
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/mock/Mocktask.h
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/mock/Mocktask.c
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/obj/Mocktask.o
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/test_periodic_scheduler_runner.c
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/obj/test_periodic_scheduler_runner.o
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/obj/test_periodic_scheduler.o
Removed _build_lpc40xx_freertos/test/test_periodic_scheduler/test_periodic_scheduler.exe
Removed _build_lpc40xx_freertos/test/test_sl_string/test_sl_string_runner.c
Removed _build_lpc40xx_freertos/test/test_sl_string/obj/test_sl_string_runner.o
Removed _build_lpc40xx_freertos/test/test_sl_string/obj/test_sl_string.o
Removed _build_lpc40xx_freertos/test/test_sl_string/test_sl_string.exe
Removed _build_lpc40xx_freertos/obj/entry_point.o
Removed _build_lpc40xx_freertos/obj/interrupt_vector_table.o
Removed _build_lpc40xx_freertos/obj/clock.o
Removed _build_lpc40xx_freertos/obj/crash.o
Removed _build_lpc40xx_freertos/obj/syscall.o
Removed _build_lpc40xx_freertos/obj/startup.o
Removed _build_lpc40xx_freertos/obj/acceleration.o
Removed _build_lpc40xx_freertos/obj/sensors.o
Removed _build_lpc40xx_freertos/obj/ff.o
Removed _build_lpc40xx_freertos/obj/ffsystem.o
```

```
sarika@Sarikas-MacBook-Pro Dev_Drv % clear
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --help
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
usage: scons [OPTION] [TARGET] ...
```

SCons Options:

-b, -d, -e, -m, -S, -t, -w, --environment-overrides, --no-keep-going, --no-print-directory, --print-directory, --stop, --touch	Ignored for compatibility.
-c, --clean, --remove	Remove specified targets and dependencies.
-C DIR, --directory=DIR	Change to DIR before doing anything.
--cache-debug=FILE	Print CacheDir debug info to FILE.
--cache-disable, --no-cache	Do not retrieve built targets from CacheDir.
--cache-force, --cache-populate	Copy already-built targets into the CacheDir.
--cache-readonly	Do not update CacheDir with built targets.
--cache-show	Print build actions for files from CacheDir.
--config=MODE	Controls Configure subsystem: auto, force, cache.
-D	Search up directory tree for SConstruct, build all Default() targets.
--debug=TYPE	Print various types of debugging information: count, duplicate, explain, findlibs, includes, memoizer, memory, objects, pdb, prepare, presub, stacktrace, time, action-timestamps.
--diskcheck=TYPE	Enable specific on-disk checks.
--duplicate=DUPLICATE	Set the preferred duplication methods. Must be one of hard-soft-copy, soft-hard-copy, hard-copy, soft-copy, copy
--enable-virtualenv	Import certain virtualenv variables to SCons
-f FILE, --file=FILE, --makefile=FILE, --sconstruct=FILE	Read FILE as the top-level SConstruct file.
-h, --help	Print defined help message, or this one.
-H, --help-options	Print this message and exit.
-i, --ignore-errors	Ignore errors from build actions.
-I DIR, --include-dir=DIR	Search DIR for imported Python modules.
--ignore-virtualenv	Do not import virtualenv variables to SCons
--implicit-cache	Cache implicit dependencies
--implicit-deps-changed	Ignore cached implicit dependencies.
--implicit-deps-unchanged	Ignore changes in implicit dependencies.
--interact, --interactive	Run in interactive mode.
-j N, --jobs=N	Allow N jobs at once.
-k, --keep-going	Keep going when a target can't be made.
--max-drift=N	Set maximum system clock drift to N seconds.
--md5-chunksize=N	Set chunk-size for MD5 signature computation to N kilobytes.
-n, --no-exec, --just-print, --dry-run, --recon	Don't build; just print commands.
--no-site-dir	Don't search or use the usual site_scons dir.
--profile=FILE	Profile SCons and put results in FILE.
-q, --question	Don't build; exit status says if up to date.
-Q	Suppress "Reading/Building" progress messages.
--random	Build dependencies in random order.
-s, --silent, --quiet	Don't print commands.
--site-dir=DIR	Use DIR instead of the usual site_scons dir.
--stack-size=N	Set the stack size of the threads used to run jobs to N kilobytes.
--taskmastertrace=FILE	Trace Node evaluation to FILE.

Project ▾

▼ projects

lpc40xx_cmpe30

lpc40xx_freertos

I0_lowlevel

I1_freertos

I2_utils

I3_drivers

I4_io

I5_application

periodics

main.c

rtos_hooks.c

unittest_header_overrides

entry_point.c

READMEMain.md

README-GETTING-STARTED.md

installs/README.md

nxp-programmer/README.md

README-SCons.md

main.c

CMake project is not loaded

17

int main(void) {

18

create_blinky_tasks();

19

create_uart_task();

20

21

puts("Starting RTOS");

22

vTaskStartScheduler(); // This function never returns unless RTOS scheduler

23

// runs out of memory and fails

24

25

return 0;

26

}

27

main

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sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-clang-format

scons: Reading SConscript files ...

--- Using ARM compiler on MAC ---

scons: done reading SConscript files.

scons: Building targets ...

python /Users/sarika/workspace/Dev_Drv/site_scons/site_tools/unittest/unit_test_runner.py --summary-only --timeout=5 -i /Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos

_lpc40xx_freertos/test/test_periodic_scheduler/test_periodic_scheduler.exe -i /Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/test/test_sl_string/test_sl_string.exe

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| Unit Test Operation Summary |

+-----+

| Name | Result |

+-----+

| test_app_cli | PASSED |

| test_periodic_callbacks | PASSED |

| test_periodic_scheduler | PASSED |

| test_sl_string | PASSED |

+-----+

Compiling projects/lpc40xx_freertos/I5_application/main.c

Linking _build_lpc40xx_freertos/lpc40xx_freertos.elf

arm-none-eabi-objcopy -O binary _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.bin

arm-none-eabi-objcopy -O ihex _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.hex

arm-none-eabi-objdump --source --all-Headers --demangle --line-numbers --wide _build_lpc40xx_freertos/lpc40xx_freertos.elf > _build_lpc40xx_freertos/lpc40xx_freertos.lst

arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf

text data bss dec hex filename

47260 852 4072 52184 cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf

scons: done building targets.

sarika@Sarikas-MacBook-Pro Dev_Drv %

Terminal: Local × +

```
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test --project=lpc40xx_freertos
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
   text    data    bss     dec     hex filename
  47260     852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test --project=lpc40xx_freertos --no-float-format
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
Linking _build_lpc40xx_freertos/lpc40xx_freertos.elf
arm-none-eabi-objcopy -O binary _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.bin
arm-none-eabi-objcopy -O ihex _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.hex
arm-none-eabi-objdump --source --all-Headers --demangle --line-numbers --wide _build_lpc40xx_freertos/lpc40xx_freertos.elf > _build_lpc40xx_freertos/lpc40xx_freertos.lst
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
   text    data    bss     dec     hex filename
  31744     484    4072   36300   8dcc _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv %
```

```

sarika@Sarikas-MacBook-Pro Dev_Drv % time scons --no-unit-test
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss    dec    hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
scons --no-unit-test 1.02s user 0.35s system 92% cpu 1.490 total
sarika@Sarikas-MacBook-Pro Dev_Drv % time scons --no-unit-test -j12
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss    dec    hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
scons --no-unit-test -j12 1.06s user 0.36s system 92% cpu 1.536 total
sarika@Sarikas-MacBook-Pro Dev_Drv % time scons --no-unit-test -j10
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss    dec    hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
scons --no-unit-test -j10 1.07s user 0.37s system 89% cpu 1.598 total
sarika@Sarikas-MacBook-Pro Dev_Drv % time scons --no-unit-test -j3
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
  text    data    bss    dec    hex filename
 47260    852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
scons --no-unit-test -j3 1.04s user 0.37s system 90% cpu 1.563 total
sarika@Sarikas-MacBook-Pro Dev_Drv %

```



```
sarika@Sarikas-MacBook-Pro Dev_Drv % python nxp-programmer/flash.py --port /dev/tty.SLAB_USBtoUART
Flashing file [/Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/lpc40xx_freertos.bin] using device ID [/dev/tty.SLAB_USBtoUART]
INFO:root:cpu=autodetect oscfreq=16000 device=/dev/tty.SLAB_USBtoUART baud=115200
INFO:root:Erasing flash sectors 0-11

===== 100.0% Block # 0xC000 of 0xC000

INFO:root:Programmed successfully in 6.8 seconds

  ____  _  _  ____  ____  ____  ____
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  ___) | | | | | | | | | | | | ___) |___) |
 |____/ \___/ \___ \___ \___ \___ \___ \___ \
```

```
sarika@Sarikas-MacBook-Pro Dev_Drv % python nxp-programmer/flash.py --port /dev/tty.SLAB_USBtoUART -i ../Dev_Drv/_build_lpc40xx_freertos/lpc40xx_freertos.bin
Flashing file [/Users/sarika/workspace/Dev_Drv/_build_lpc40xx_freertos/lpc40xx_freertos.bin] using device ID [/dev/tty.SLAB_USBtoUART]
INFO:root:cpu=autodetect oscfreq=160000 device=/dev/tty.SLAB_USBtoUART baud=115200
INFO:root:Erasing flash sectors 0-11

===== 100.0% Block # 0xC000 of 0xC000

INFO:root:Programmed successfully in 6.8 seconds

  ____  _  _  ____  ____  ____  ____
 / ____| | | | | / ____/ ____/ ____/ ____|
 \___ \ | | | | | | | | | | | | | | \___ \___ \
  ___) | | | | | | | | | | | | | | ___) |___) |
 |____/ \___/ \___ \___ \___ \___ \___ \___/
```

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```
sarika@Sarikas-MacBook-Pro Dev_Drv % python nxp-programmer/flash.py --help
```

```
usage: flash.py [-h] [-i <FILE>] [-p <STRING or FILE>] [-v]
```

```
Example usage: python flash.py -d COM6 -i ..\_build\sjtwo-c.bin
```

optional arguments:

-h, --help show this help message and exit

-i <FILE>, --input <FILE>

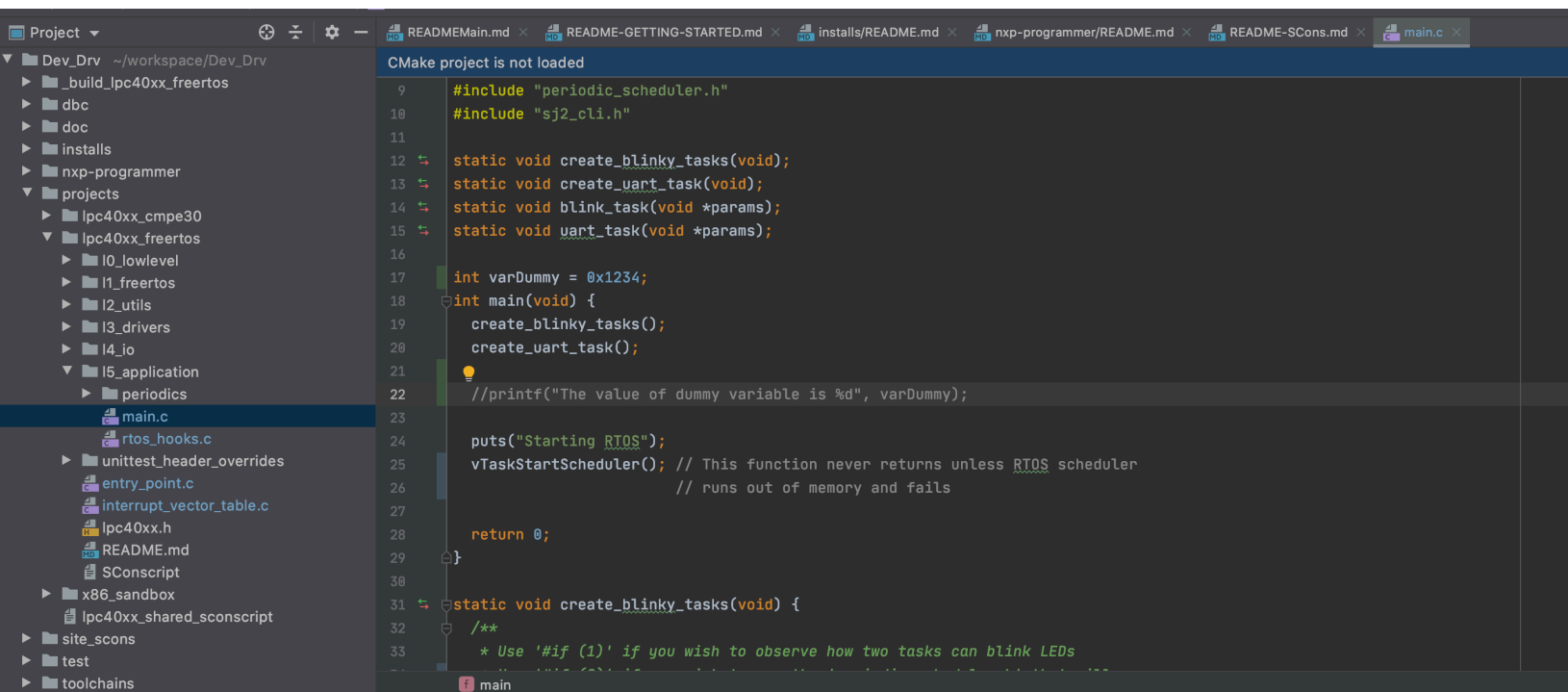
File path of firmware (.bin) to flash onto target

-p <STRING or FILE>, -d <STRING or FILE>, --port <STRING or FILE>, --device <STRING or FILE>

USB to Serial device ID (i.e. COM6 or /dev/ttyUSB0)

-v, --verbose

```
sarika@Sarikas-MacBook-Pro Dev_Drv %
```



```

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sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test --project=lpc40xx_freertos
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
scons: done reading SConscript files.
scons: Building targets ...
Compiling projects/lpc40xx_freertos/l5_application/main.c
Linking _build_lpc40xx_freertos/lpc40xx_freertos.elf
arm-none-eabi-objcopy -O binary _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.bin
arm-none-eabi-objcopy -O ihex _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.hex
arm-none-eabi-objdump --source --all-Headers --demangle --line-numbers --wide _build_lpc40xx_freertos/lpc40xx_freertos.elf > _build_lpc40xx_freertos/lpc40xx_freertos.lst
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
   text    data     bss     dec      hex filename
  47308     856    4072   52236   cc0c _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv % scons --no-unit-test --project=lpc40xx_freertos
scons: Reading SConscript files ...
--- Using ARM compiler on MAC ---
Clang formatting: [lpc40xx_freertos/l5_application/main.c]
scons: done reading SConscript files.
scons: Building targets ...
Compiling projects/lpc40xx_freertos/l5_application/main.c
Linking _build_lpc40xx_freertos/lpc40xx_freertos.elf
arm-none-eabi-objcopy -O binary _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.bin
arm-none-eabi-objcopy -O ihex _build_lpc40xx_freertos/lpc40xx_freertos.elf _build_lpc40xx_freertos/lpc40xx_freertos.hex
arm-none-eabi-objdump --source --all-Headers --demangle --line-numbers --wide _build_lpc40xx_freertos/lpc40xx_freertos.elf > _build_lpc40xx_freertos/lpc40xx_freertos.lst
arm-none-eabi-size --format=berkeley _build_lpc40xx_freertos/lpc40xx_freertos.elf
   text    data     bss     dec      hex filename
  47260     852    4072   52184   cbd8 _build_lpc40xx_freertos/lpc40xx_freertos.elf
scons: done building targets.
sarika@Sarikas-MacBook-Pro Dev_Drv %
```

```
[sarika@Sarikas-MacBook-Pro ~ % cd workspace
[sarika@Sarikas-MacBook-Pro workspace % git clone https://github.com/Sarika-Natu/sjtwo-c.git
Cloning into 'sjtwo-c'...
remote: Enumerating objects: 8056, done.
remote: Total 8056 (delta 0), reused 0 (delta 0), pack-reused 8056
Receiving objects: 100% (8056/8056), 231.22 MiB | 1.40 MiB/s, done.
Resolving deltas: 100% (3505/3505), done.
Updating files: 100% (12509/12509), done.
sarika@Sarikas-MacBook-Pro workspace % cd sjtwo-c
[sarika@Sarikas-MacBook-Pro sjtwo-c % git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
sarika@Sarikas-MacBook-Pro sjtwo-c % git status
On branch master
Your branch is up to date with 'origin/master'.

Untracked files:
  (use "git add <file>..." to include in what will be committed)
    .idea/

nothing added to commit but untracked files present (use "git add" to track)
sarika@Sarikas-MacBook-Pro sjtwo-c % █
```