

```

*-----
* Makefile:
*-----

ROOTDIR      = ../../..

VLIBDIR      = $(ROOTDIR)/libs/vlib

LIBVLIB      = $(VLIBDIR)/lib/libvec.a
LIBVUTL      = $(VLIBDIR)/tst/libutl.a

MYLDOPTS     = -lmkl_intel_lp64 -lmkl_core -lmkl_sequential -lpthread -lrt

USE_INTEL    = /usr/local/etc/use_ictce4
INTEL_VERS   = 64 20100414Z
ICCFLGS      = -O3 -ip -axPTW -D_GNU_SOURCE -D H5_USE_16_API

MKL_PATH     := $(shell $(USE_INTEL) mkl_library_path $(INTEL_VERS))
export PATH  := $(shell $(USE_INTEL) path $(INTEL_VERS))
export LD_PATH := $(shell $(USE_INTEL) ld_library_path $(INTEL_VERS))

VECINC       = $(VLIBDIR)/include
MKLINC       = /opt/intel/ictce/4.0.0.020/mkl/include

INCS         = vparam.h $(VECINC)/vlib.h
OBJS         = prtime.o fftunpk.o

ONLY         = -c
CFLAGS       = -I$(VECINC) -I$(MKLINC) $(ICCFLGS)
LDFLAGS      = -L$(MKL_PATH)
LDOPTS       = $(LIBVUTL) $(LIBVLIB) $(LDFLAGS) $(MYLDOPTS)
AR           = ar
ARFLAGS      = rcv
CC           = icc

TSTS         = tst_rvfft2d

all: $(LIBVUTL) $(TSTS)

$(LIBVUTL): $(OBJS)
    $(AR) $(ARFLAGS) $(LIBVUTL) $?

#tst_rvfft2d: tst_rvfft2d.c $(INCS) $(LIBVUTL) $(OBJS) $(LIBVLIB)
#    $(CC) $(CFLAGS) $(LDOPTS) -o $@

tst_%: tst_%.c $(INCS) $(LIBVUTL) $(OBJS) $(LIBVLIB)
    $(CC) $(CFLAGS) $(LDOPTS) -o $@

$(LIBVLIB): FORCE
    cd ..; $(MAKE)

clean:
    rm -f *.o
    rm -f $(TSTS)
    rm -f $(LIBVUTL)

```

FORCE:

run: runtst

runtst:

```
for tst in $(TSTS); do ./$$tst; done
```

*-----

*** Make output (W/ substitution):**

*-----

```
[jburri@h1 tst]$ make -f Makefile_tst clean all
rm -f *.o
rm -f tst_rvfft2d
rm -f ../../../../libs/vlib/tst/libutl.a
icc -I../../../../libs/vlib/include -
I/opt/intel/ictce/4.0.0.020/mkl/include -O3 -ip -axPTW -D_GNU_SOURCE -D
H5_USE_16_API -c -o prtttime.o prtttime.c
icc -I../../../../libs/vlib/include -
I/opt/intel/ictce/4.0.0.020/mkl/include -O3 -ip -axPTW -D_GNU_SOURCE -D
H5_USE_16_API -c -o fftunpk.o fftunpk.c
ar rcv ../../../../libs/vlib/tst/libutl.a prtttime.o fftunpk.o
a - prtttime.o
a - fftunpk.o
make: *** No rule to make target `tst_rvfft2d', needed by `all'. Stop.
```

*-----

*** Make output (W/O substitution):**

*-----

```
[jburri@h1 tst]$ make -f Makefile_tst clean all
rm -f *.o
rm -f tst_rvfft2d
rm -f ../../../../libs/vlib/tst/libutl.a
icc -I../../../../libs/vlib/include -
I/opt/intel/ictce/4.0.0.020/mkl/include -O3 -ip -axPTW -D_GNU_SOURCE -D
H5_USE_16_API -c -o prtttime.o prtttime.c
icc -I../../../../libs/vlib/include -
I/opt/intel/ictce/4.0.0.020/mkl/include -O3 -ip -axPTW -D_GNU_SOURCE -D
H5_USE_16_API -c -o fftunpk.o fftunpk.c
ar rcv ../../../../libs/vlib/tst/libutl.a prtttime.o fftunpk.o
a - prtttime.o
a - fftunpk.o
cd ..; make
make[1]: Entering directory
`/home/jburri/research/sandbox/v6.3_sandbox/libs/vlib'
cd src; make
make[2]: Entering directory
`/home/jburri/research/sandbox/v6.3_sandbox/libs/vlib/src'
make[2]: Nothing to be done for `all'.
make[2]: Leaving directory
`/home/jburri/research/sandbox/v6.3_sandbox/libs/vlib/src'
make[1]: Leaving directory
`/home/jburri/research/sandbox/v6.3_sandbox/libs/vlib'
icc -I../../../../libs/vlib/include -
I/opt/intel/ictce/4.0.0.020/mkl/include -O3 -ip -axPTW -D_GNU_SOURCE -D
```

```
H5_USE_16_API tst_rvfft2d.c ../../../../libs/vlib/tst/libutl.a
../../../../libs/vlib/lib/libvec.a -L/opt/intel/mkl/10.2.5.035/lib/em64t -
lmkl_intel_lp64 -lmkl_core -lmkl_sequential -lpthread -lrt -o
tst_rvfft2d
```

```
*-----
* Sample Makefile:
*-----
```

```
ICCFLGS = -O3 -ip -axPTW
```

```
ONLY = -c
CFLAGS = $(ICCFLGS)
CC = icc
```

```
TSTS = tst_sizeof
```

```
all: $(TSTS)
```

```
tst_%: tst_%.c
      $(CC) $(CFLAGS) $< -o $@
```

```
clean:
      rm -f *.o
      rm -f $(TSTS)
```

```
run: runtst
```

```
runtst:
      for tst in $(TSTS); do ./$$tst; done
```

```
*-----
* Sample Makefile output:
*-----
```

```
[jburri@h1 make]$ make clean all run
rm -f *.o
rm -f tst_sizeof
icc -O3 -ip -axPTW tst_sizeof.c -o tst_sizeof
for tst in tst_sizeof; do ./$$tst; done
```

```
Start test_sizeof
```

```
sizeof(char) = 1
sizeof(short) = 2
sizeof(int) = 4
sizeof(size_t) = 8
sizeof(long) = 8
sizeof(float) = 4
sizeof(double) = 8
```

```
Finish with test_sizeof
```