

How to compile PeakFQ on Linux

First, [install the Intel Fortran Compiler](#).

You can download the incomplete source code of PeakFQ from [its website](#). Here, I'll use [PeakFQ_7.5.1.src.zip](#).

[compile_peakfq.sh](#)

```
#!/bin/sh

# download source code
wget
https://water.usgs.gov/software/PeakFQ/code/7.5.1/PeakFQ_7.5.1.src.zip

# unzip it
mkdir -p ~/usr/local/src
unzip PeakFQ_7.5.1.src.zip -d ~/usr/local/src
cd ~/usr/local/src
mv PeakFQ_7.5.1.src/src/FORTRAN peakfq
rm -rf PeakFQ_7.5.1.src
cd peakfq

# rename all filenames to lowercase
for i in *.*; do
  j=$(echo $i | tr A-Z a-z)
  [ $i = $j ] || mv $i $j
done

# rename include and module names in source files to lowercase
for i in *.*; do
  grep -q ".*.INC" $i || continue
  for j in $(grep ".*.INC" $i | sort -u | fromdos | sed
"s/^[^']*\\'|$/g"); do
    k=$(echo $j | tr A-Z a-z)
    sed -i "s/$j/$k/" $i
  done
done

# move DENYNONE from ACTION to SHARE
sed -Ei "s/(, )(DENYNONE)/\\1SHARE='\\2/" wdoppc90.for

# comment out non-existent modules and data type
sed -Ei 's/^(.*(KERNEL32|T_OVERLAPPED))/!\\1/' scenmod.f90

# comment out Windows functions
sed -Ei 's/^(.*(peeknamedpipe|readfile|writefile))/!\\1/i' scenmod.f90

# don't convert filenames to uppercase
```

```
sed -Ei 's/^(.*CALL UPCASE)/!\1/' peakfq.for

# download missing files
for i in \
  adwdm/cfbuff.inc \
  adwdm/cdrloc.inc \
  adwdm/fmsgwd.inc \
  adwdm/utwdmd.for \
  adwdm/utwdmf.for \
  adwdm/utwdt1.for \
  adwdm/wdatm1.for \
  adwdm/wdmchk.for \
  adwdm/wdmess.for \
  wdm/ctsbuf.inc \
  wdm/cwdmid.inc \
  wdm/cwtsds.inc \
  wdm/tsbufr.for \
  wdm/wdatm2.for \
  wdm/wdatrb.for \
  wdm/wdatru.for \
  wdm/wdbtch.for \
  wdm/wdmid.for \
  wdm/wdtms1.for \
  wdm/wdtms2.for \
; do
  wget
  https://svn.oss.deltares.nl/repos/openda/trunk/model_hspf/fortran/liban
  ne4.0/src/$i
done

# create main.f90
cat << 'EOT' > main.f90
character(len=256) :: specfile

if(command_argument_count().eq.0) then
  write(*,*) "Usage: peakfq specfile"
else
  call get_command_argument(1, specfile)
  call peakfq(specfile)
endif
end
EOT

# create Makefile
cat << 'EOT' > Makefile
FC=ifx
LDFLAGS=-nofor-main

all: peakfq
```

```
clean:
  $(RM) *.o EMAUtil/*.o *.mod peakfq

peakfq: \
  main.o \
  EMAUtil/dcdflib1.o \
  EMAUtil/imslfake.o \
  EMAUtil/probfun.o \
  compspecs.o \
  datsys90.o \
  emafit.o \
  emathresh.o \
  j407wc.o \
  j407xe.o \
  ktutil.o \
  peakfq.o \
  pkfqsta.o \
  pkwdm.o \
  qfdprs.o \
  scenmod.o \
  stationdata.o \
  stgaus.o \
  stutil.o \
  tsbufr.o \
  utchar.o \
  utcpgn.o \
  utdate.o \
  utgnrl.o \
  utj407.o \
  utnumb.o \
  utstat.o \
  utwdmd.o \
  utwdmf.o \
  utwdt1.o \
  wdatm1.o \
  wdatm2.o \
  wdatrb.o \
  wdatru.o \
  wdbtch.o \
  wdmchk.o \
  wdmess.o \
  wdmid.o \
  wdoppc90.o \
  wdpeak.o \
  wdtble.o \
  wdtms1.o \
  wdtms2.o
  $(FC) $(LDFLAGS) -o $@ $^

peakfq.o: emathresh.o compspecs.o
```

```
pkfqsta.o: scenmod.o

j407xe.o: emathresh.o stationdata.o

j407wc.o: emathresh.o

%.o: %.f90
    $(FC) $(FFLAGS) -c -o $@ $<

%.o: %.for
    $(FC) $(FFLAGS) -c -o $@ $<
EOT

# build
make

# install PeakFQ for Windows; find and copy pkfqms.wdm in lowercase
# download it from this website
wget https://clawiki.isnew.info/_media/howtos/pkfqms.wdm
```

You don't need to run this command, but I used it to find undefined references:

```
# see what symbols are undefined
for i in $(make &> /dev/stdout | grep "undefined reference" | sed 's/.*`//';
s/_.*`//' | sort -u); do
    if ! grep -qiE "(function|subroutine) *$i" *.* */*.*; then
        echo "$i: NOT FOUND"
    fi
done
```

From:
<https://www.hydrowiki.isnew.info/> - HydroCS Wiki

Permanent link:
https://www.hydrowiki.isnew.info/howtos/how_to_compile_peakfq_on_linux?rev=1726798771

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