

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

# download missing files
```

```
for i in \  
  adwm/cfbuff.inc \  
  adwm/cdrloc.inc \  
  adwm/fmsgwd.inc \  
  adwm/utwdmd.for \  
  adwm/utwdmf.for \  
  adwm/utwdt1.for \  
  adwm/wdatm1.for \  
  adwm/wdmchk.for \  
  adwm/wdmess.for \  
  wdm/ctsbuf.inc \  
  wdm/cwdmid.inc \  
  wdm/cwtsds.inc \  
  wdm/tsbuf.r.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/dcdfplib1.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 \  
  tsbuf.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://hydrowiki.isnew.info/> - **HydroCS Wiki**

Permanent link:
https://hydrowiki.isnew.info/howtos/how_to_compile_peakfq_on_linux?rev=1726751591

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