This document indicates how to build the mpiP library and the changes required to build MILC.

**mpiP download -**

<http://mpip.sourceforge.net>

**Libraries required -**

Libunwind

Binutils

Iberty

Lzma

Libelf

Libdwarf

**Steps to install mpiP -**

In the mpiP folder run the following command after all the required libraries are installed. Ensure you set the path accordingly.

1) configure

jothi1@cori03:~/cori/milc\_cori/milc\_new/milc7/ks\_imp\_dyn/mpiP-3.4.1> F77=ftn CC=cc CXX=CC ./configure --with-libunwind=/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji --with-binutils-dir=/opt/cray/cce/default/cray-binutils/x86\_64-unknown-linux-gnu --with-include=-I/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji/include --with-ldflags=-L/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji/lib

If successful, should get the following summary -

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mpiP Configuration Summary

C compiler : cc

Fortran compiler : ftn

Timer : MPI\_Wtime

Stack Unwinding : libunwind

Address to Source Lookup : bfd

MPI-I/O support : yes

MPI-RMA support : yes

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2) Make

**Libraries -**

Download spack

<https://github.com/LLNL/spack>

1) libelf

jothi1@cori01:~/cori/milc\_cori/spack/bin> ./spack install libelf

**==>** Installing libelf

**==>** Fetching http://www.mr511.de/software/libelf-0.8.13.tar.gz

######################################################################## 100.0%

**==>** Staging archive: /global/u2/j/jothi1/cori/milc\_cori/spack/var/spack/stage/libelf-0.8.13-vsp3v7d757pmmrwzyt56gggo7kc4ivsd/libelf-0.8.13.tar.gz

**==>** Created stage in /global/u2/j/jothi1/cori/milc\_cori/spack/var/spack/stage/libelf-0.8.13-vsp3v7d757pmmrwzyt56gggo7kc4ivsd

**==>** Ran patch() for libelf

**==>** Building libelf [AutotoolsPackage]

**==>** Executing phase : 'autoreconf'

**==>** Executing phase : 'configure'

**==>** Executing phase : 'build'

**==>** Executing phase : 'install'

**==>** Successfully installed libelf

Fetch: 2.46s. Build: 10.60s. Total: 13.06s.

**[+]** /global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libelf-0.8.13-vsp3v7d757pmmrwzyt56gggo7kc4ivsd

2) libunwind

jothi1@cori01:~/cori/milc\_cori/spack/bin> ./spack install libunwind

**==>** Installing libunwind

**==>** Fetching http://download.savannah.gnu.org/releases/libunwind/libunwind-1.1.tar.gz

######################################################################## 100.0%

**==>** Staging archive: /global/u2/j/jothi1/cori/milc\_cori/spack/var/spack/stage/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji/libunwind-1.1.tar.gz

**==>** Created stage in /global/u2/j/jothi1/cori/milc\_cori/spack/var/spack/stage/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji

**==>** Ran patch() for libunwind

**==>** Building libunwind [AutotoolsPackage]

**==>** Executing phase : 'autoreconf'

**==>** Executing phase : 'configure'

**==>** Executing phase : 'build'

**==>** Executing phase : 'install'

**==>** Successfully installed libunwind

Fetch: 3.19s. Build: 24.38s. Total: 27.57s.

**[+]** /global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji

3) Lzma, Iberty

Link using -dynamic

It should load the default path

**MILC Makefile -**

Provide the path to the required libraries in the Makefile.

Provide the flag -

MPIPFLAGS= -dynamic -L/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji/lib -L/global/homes/j/jothi1/cori/milc\_cori/milc\_new/milc7/mylib -I/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libunwind-1.1-zbjtq64v5x2wl4zrplxz2elf3d6pdiji/include -L/global/u2/j/jothi1/cori/milc\_cori/spack/opt/spack/cray-CNL-haswell/gcc-6.3.0/libelf-0.8.13-vsp3v7d757pmmrwzyt56gggo7kc4ivsd/lib -lm -lmpiP -ldwarf -lelf -lunwind -llzma -lbfd -liberty -lunwind-x86\_64 -lz

LDFLAGS = ${OPT} ${OCFLAGS} ${MPIPFLAGS}