

Instances

Reproducing GPU specific error on machine

```
Ubuntu 16.04.5 LTS (GNU/Linux 4.4.0-1069-aws x86_64v)
git clone --recursive https://github.com/ChaiBapchya/incubator-mxnet
cd incubator-mxnet
git checkout origin/randint
```

```
vim ./config.mk
USE_CUDNN=1
USE_CUDA=1
```

To set CUDAPATH, see ~/.bashrc which has all environment variables path

```
make -j8 -e USE_CUDA_PATH=/usr/local/cuda-9.0
```

Avoid password prompting when entering certain script

```
sudo echo
```

Unable to pick up the fact that while doing ssh file has to pick up pem file

```
ssh-add ~/Downloads/bapac_new.pem.txt
```

then when you do ssh://ubuntu@192.... it works as if ssh -i "pem" ubuntu@...
on command line now you dont have to mention file name all the time

```
nvidia-smi
```

```
make -j $(nproc) USE_OPENCV=1 USE_BLAS=openblas USE_CUDA=1 USE_CUDA_PATH=/usr/local/cu
```

EC2 issue - next day, ec2 instance stopped (resolve by using static IP, assign elastic IP)

it allocates new IP (update in cloud_desktop.rpf on local machine (MAC))

replicate all steps of cloud desktop after `echo sudo`

nvidia-smi - Grid K520

Error

liblapack.so.3 symbol not found gotoblas

1. sudo update-alternatives --config liblapack.so.3
2. make
3. export pythonpath
4. import mx in python

helps select 1 out of 4 options of liblapack

P2 8xl

nvidia-smi: Tesla K80

Tried

1. on master as well as randint
2. updating the submodules recursively (with/without init)

Error

```
src/kvstore/././gpu_topology.h:898:18: error: comparison between signed and unsigned integers
    if (!(parent >= num_elements*num_elements ||
        ^
src/kvstore/././gpu_topology.h:899:15: error: comparison between signed and unsigned integers
    child >= num_elements*num_elements) && (parent != child)) {
        ^
Makefile:461: recipe for target 'build/src/kvstore/gradient_compression.o' failed
make: *** [build/src/kvstore/gradient_compression.o] Error 1
make: *** Waiting for unfinished jobs....
cclplus: all warnings being treated as errors
Makefile:461: recipe for target 'build/src/kvstore/kvstore.o' failed
```

Troubleshoot

```
-Werror=sign-compare
```

is weird from

```
-Wsign-compare
```

Meaning the flag is being assigned as error along with warning

Search for this in makefile

```
grep -i "\-Werror" Makefile
```

```
grep -i "\-Werror" Makefile
CFLAGS += -g -Werror
NVCCFLAGS += -Werror cross-execution-space-call
```

```
ubuntu@ip-172-31-82-67:~/incubator-mxnet$ grep -il "\-Werror" Makefile
Makefile
ubuntu@ip-172-31-82-67:~/incubator-mxnet$ grep -ir "\-Werror" .
./3rdparty/tvm/Jenkinsfile:      echo set\\(CMAKE_CXX_FLAGS -Werror\\) >> config.
./3rdparty/tvm/Jenkinsfile:      echo set\\(CMAKE_CXX_FLAGS -Werror\\) >> config.
./3rdparty/tvm/Jenkinsfile:      echo set\\(CMAKE_CXX_FLAGS -Werror\\) >> config.
./3rdparty/tvm/Jenkinsfile:      echo set\\(CMAKE_CXX_FLAGS -Werror\\) >> config.
./3rdparty/openmp/runtime/CMakeLists.txt:  "Enable -Werror flags to turn warnings in
./3rdparty/openmp/runtime/cmake/LibompHandleFlags.cmake:  libomp_append(flags_local
./3rdparty/openmp/runtime/cmake/config-ix.cmake:check_c_compiler_flag(-Werror LIBOMP_F
./3rdparty/openmp/libomptarget/CMakeLists.txt:  "Enable -Werror flags to turn warnin
./3rdparty/openmp/libomptarget/CMakeLists.txt:  add_definitions(-Werror)
./3rdparty/openmp/libomptarget/cmake/Modules/config-ix.cmake:check_c_compiler_flag(-W
./3rdparty/mkldnn/cmake/platform.cmake:  append(CMAKE_CXX_FLAGS "-Wall -Werror -Wno-
```

```

./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/test/CMakeLists.txt:
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/.ycm_extra_conf.py: '-v
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/CMakeLists.txt: add_c
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/CMakeLists.txt: add_c
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/CMakeLists.txt: add_c
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/cmake/HandleGTest.cmak
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/cmake/AddCXXCompilerFl
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/benchmark/cmake/AddCXXCompilerFl
./3rdparty/onnx-tensorrt/third_party/onnx/third_party/pybind11/tests/CMakeLists.txt:
./3rdparty/onnx-tensorrt/third_party/onnx/CMakeLists.txt: target_compile_options(or
./3rdparty/onnx-tensorrt/setup.py: '-Werror=format-security',
./3rdparty/googletest/googletest/xcode/Config/General.xcconfig:WARNING_CFLAGS = -Wall
./Makefile: CFLAGS += -g -Werror
./Makefile: NVCCFLAGS += -Werror cross-execution-space-call
ubuntu@ip-172-31-82-67:~/incubator-mxnet$ grep -ir "sign\|-compare" .
./3rdparty/tvm/3rdparty/dmlc-core/include/dmlc/logging.h:#pragma GCC diagnostic ignore
./3rdparty/openmp/runtime/cmake/LibompHandleFlags.cmake: libomp_append(flags_local -v
./3rdparty/openmp/runtime/cmake/config-ix.cmake:check_c_compiler_flag(-Wsign-compare l
./3rdparty/dmlc-core/include/dmlc/logging.h:#pragma GCC diagnostic ignored "-Wsign-con
./3rdparty/onnx-tensorrt/third_party/onnx/CMakeLists.txt: target_compile_options(or
./3rdparty/googletest/googletest/xcode/Config/General.xcconfig:WARNING_CFLAGS = -Wall
./CMakeLists.txt: set(CMAKE_C_FLAGS "-Wall -Wno-unknown-pragmas -Wno-sign-compare")
./Makefile:WARNFLAGS= -Wall -Wsign-compare

```

All of this meant only place where its fucked is in Makefile

```
vi Makefile
```

VI shortcuts

```
:set ic
```

/cflags

n (enter)

showed it was together when Dev flag is set to 1

thus the root cause of all this is dev=1

Solution dev=0 in config.mk

Issue

make took a long time to build

possibility of it closing

hence, xscreen

Mistake

I was using screen on local machine (using the screen to connect to EC2) and then running commands there

Solution

Should be using xscreen after SSH to EC2 instance

Commands

1. Start screen - `screen`
2. List screens - `screen -ls`
3. Attach to a particular screen - `screen -r <number>`

4. detach Ctrl+A, d
5. kill screen you want to quit - <number> quit
6. wrap on/of - Ctrl+A, Ctrl+R
7. detach, attach screen -r -d <number>

OPENCV issue

```
/tmp/ccS0r6RE.o: in function main
im2rec.cc:(.text.startup+0x2878): undefined reference to `cv::imencode(std::string cor
collect2: error: ld returned 1 exit status
Makefile:203: recipe for target 'bin/im2rec' failed
make: *** [bin/im2rec] Error 1
```

Disabled USE_OPENCV flag

```
/usr/bin/ld: build/src/common/rtc.o: undefined reference to symbol 'cudaSetDevice@@lib
/usr/local/cuda/lib64/libcudart.so.9.0: error adding symbols: DSO missing from command
collect2: error: ld returned 1 exit status
Makefile:525: recipe for target 'bin/im2rec' failed
make: *** [bin/im2rec] Error 1
make: *** Waiting for unfinished jobs....
```

Debug on instances

<http://johntfoster.github.io/posts/debugging-cc%2B%2B-libraries-called-by-python.html>

GDB and python

Moduleseed, test seed (2 different things)

nocapture (doesn't capture the log and allows you to print everything even if you run nose test)

default it is set to capture (hence if the test passes it doesn't spit any log out)

```
MXNET_MODULE_SEED=1085317285 MXNET_TEST_SEED=676740866 python -m nose -v --nocapture t
```

Default python is 3.7 How to reproduce for python2

```
conda list
conda create -n temp python=2.7 -y
source activate temp
python --version
export PYTHONPATH=/home/ubuntu/randint/incubator-mxnet/python/ #ensures it always picks up the right python

pip freeze
conda list

#shows
```

verify python version inside python file

```
import sys
print(sys.version)
```

```
make -j $(nproc) USE_BLAS=apple DEBUG=1
```

Unison issue

```
unison cloud_desktop
Fatal error: Server: Filesystem watcher error: cannot add a watcher: system limit reac
The watcher can be disabled by setting preference 'watch' to false
```

Cause - Happens when already previous command of unison is working (2 unison requests to same server coz this error)

```
ETAFailed [.git/modules/3rdparty/tvm/modules/HalideIR/config]: Destination updated dur
The file .git/modules/3rdparty/tvm/modules/HalideIR/config has been created

Failed: Destination updated during synchronization
```

Cause - probably coz i started screen

```
MXNET_TEST_COUNT=10000 python -m nose --logging-level=DEBUG --verbose -s unittest/test_c
```

Synchronization

Even when i made change in a file it was not syncing, despite unison running

Why?

coz i wasn't changing the right file? changing the file in wrong directory

why?

VSCode somehow routed the file in backend to the code which has been used to build the latest mxnet

for eg hardmax/incubator-mxnet/... was latest build

so even if i look for verify_generator from Desktop/incubator-mxnet it will still route to the hardmax (coz VSCode sucks!)

Unison errors

```
packet_write_wait: Connection to 54.172.251.181 port 22: Broken pipe
Fatal error: Lost connection with the server
```

```
Fatal error: Server: Filesystem watcher error: cannot add a watcher: system limit reac
The watcher can be disabled by setting preference 'watch' to false
```

3. just hangs (doesn't do anything) (random af)

it doesn't hang (keep using it is waiting)

```
Failed with exception Util.Transient("Destination updated during synchronization")
```

Find the time of creation in Linux/Unix

- Find the file system

```
df -T incubator-mxnet/run2.txt
```

- Use DebugFS to run stats about the file

```
sudo debugfs -R 'stat /home/ubuntu/incubator-mxnet/run2.txt' /dev/xvda1
```

Note - absolute path (or relative path from the mount point of file system)

Doesn't give the creation time -

```
stat incubator-mxnet/run2.txt
```