

Q&A updates 2

Question 1:

I am the member of asc15. I encounter a problem when I execute a mic problem. The compile is right, but when I execute it, it appears the wrong message that

```
"On the remote process, dlopen() failed. The error message sent back from the sink is
/var/volatile/tmp/coi_procs/1/84450/load_lib/iccoutk7EzEm:      undefined      symbol:
_ZNKSt6vectorI6SampleSaIS0_EE4sizeEv
```

offload error: cannot load library to the device 0 (error code 20)

```
On the sink, dlopen() returned NULL. The result of dlerror() is
"/var/volatile/tmp/coi_procs/1/84450/load_lib/iccoutk7EzEm:      undefined      symbol:
_ZNKSt6vectorI6SampleSaIS0_EE4sizeEv".
```

Answer: It is very likely that the types of some of variables that have been offloaded to MIC are not recognized. So please check your code, and do not use those types that are not supported by MIC.

Question 2:

Compilation completes without errors but there's some warnings:

```
ipo: warning #11010: *MIC* file format not recognized for /lib64/libpthread.so.0
```

```
ipo: warning #11010: *MIC* file format not recognized for /lib64/libc.so.6
```

```
ipo: warning #11010: *MIC* file format not recognized for /lib64/libc.so.6
```

And when I'm trying to run the app it crashes with the next error message:

```
On the remote process, dlopen() failed. The error message sent back from the sink is
/var/volatile/tmp/coi_procs/1/59279/load_lib/icpcoutz75hO1:      undefined      symbol:
_ZNKSt6vectorIPS_ISt7complexIdESaIS1_EESaIS4_EEixEm
```

offload error: cannot load library to the device 0 (error code 20)

```
On the sink, dlopen() returned NULL. The result of dlerror() is
"/var/volatile/tmp/coi_procs/1/59279/load_lib/icpcoutz75hO1:      undefined      symbol:
_ZNKSt6vectorIPS_ISt7complexIdESaIS1_EESaIS4_EEixEm"
```

I don't know for sure but it looks like there's some problems with std library.

Answer:

It is very likely that the types of some of variables that have been offloaded to MIC are not recognized. So please check your code, and do not use those types that are not supported by MIC.

Question 3:

We are running our program on the test platform, due to MIC initial time spent 5 seconds, for current sample MIC calculation needs 17s, so for this current calculation method, MIC performance losses one-fourth, in CPU+MIC collaborative calculation mode, performance loss about one-second, so we hope host can provide larger test data to measure real calculation performance of the programme.

Answer:,

The workload we have issued in the preliminary contest is the only data that you can use to run your code. We will not provide any other workloads in the preliminary contest, because we think it is enough for you to get the performance results.

Question 4:

Due to changes in hardware and portability for the programme, we need to manually enter some parameters at run time and CPU calculates the number of nuclear and mic as well as counting the nuclear in order to load balance ratio tuning parameters. These parameters should be modified outside the grid_kernel or inside grid_kernel pass parameters?

Answer:

The answer that has been given as follows can be found in the contest notification,

“...All the modifications of the program should be within the region that we measure the running time. There are two timers at the beginning and the end of this region respectively. ...”

Question 5:

```
std::vector<Value> grid;
```

```
std::vector<Sample> samples;
```

All contain complex types: typedef std::complex<Coord> Value;

But the plural (complex type) cannot copy to MIC Card,

How to copy the data to the MIC Card quickly?

Answer:

There do have several ways to fix it, but you have to get it done by yourself.

Question 6:

When using offload mode program running at the MIC, I get the following problems:

1: Compiles correct, run-time errors.

On the remote process, dlopen() failed. The error message sent back from the sink is
/tmp/coi_procs/2/11178/load_lib/icpcout5o3ReA: undefined symbol:

```
_ZNKSt6vectorI6SampleSaIS0_EE4sizeEv
```

offload error: cannot load library to the device 0 (error code 20)

On the sink, dlopen() returned NULL. The result of dlerror() is
"/tmp/coi_procs/2/11178/load_lib/icpcout5o3ReA: undefined symbol:
_ZNKSt6vectorI6SampleSaIS0_EE4sizeEv"

2: Compile error.

```
x86_64-k10m-linux-ld: BenchmarkMIC.o: relocation R_X86_64_PC32 against undefined symbol  
`__$U1' can not be used when making a shared object; recompile with -fPIC
```

```
x86_64-k10m-linux-ld: final link failed: Bad value
```

```
make: *** [tConvolve] Error 1
```

Answer:

It is most likely that there are something wrong in your code, please check it.

Question 7:

We know NAMD effectiveness is NS/day, what is the path of log file? Where can I find the definition?

Is it inside the control parameters of /apoa1/apoa1.namd?

Answer:

Path can be customized, specific operation or Setup method, reference handbook of NAMD. Please

submitted to the log file eventually.

Question 8:

I run ./xhpl on the cluster and get a error message: ./xhpl: /lib64/libc.so.6: version `GLIBC_2.14' not found"(required by ./ xhpl)

I guess the cluster may have a lower version of GLIBC

Answer:

I doubt that you are in other platform compilation the HPCC, such as ubuntu or other above RHEL6.4 environment.

If you want to solve this problem, I suggest you to compile again on ASC15 platform.

Question 9:

I got some questions as follows:

1. How many accelerator cards can be used on NF5280 server in the final, for example:K40
2. Can K80 accelerator card be used in NF5280 server in the final?
3. How to adjust the speed of fan in NF5280 server in the final?
4. Can you send us the test machine before the final?

Answer:

1Two accelerator cards can be installed on NF5280M4 in the final at most.

2We are stilling testing the compatibility of K80 on NF5280M4 server.

3The server can adjust the speed of fan automatically based on its power consumption without man power.

4We do not send the machine during the preliminary test, you'll be notified before the final.

Question 10:

Proposal submission requirements need to be enclosed in output file of HPCC test procedure, and HPCC tests are conducted on all 7 tests eventually generates an output file. But in fact it's 7 test samples are independent, can I test on each test independently and then summarize and integrate into a final output file output file? Is this against the rules of the game? Because I want to set a different compiler optimization options for each subtest and multithreading parameter settings, if only allow a HPCC tests will not be able to let each sub-test get the best score.

Answer:

HPCC Benchmark as a whole cannot be tested independently and then combine.

Question 11:

The Proposal of ASC15 mentioned: "Your system should be based on the Inspur NF5280M4 server. "

Is that means, if running HPCC and NAMD test in your own environment, should it be based on the Inspur NF5280M4 server?

Cos there are only two CUDA at my college, which doesn't meet your requirement, I didn't noticed before. Could you please advise me?

Answer:

This means that the system design you submitted from your proposal must be based on the test of Inspur NF5280M4 server, HPCC and NAMD, results are given can be based on its own platform, as

long as the testing and optimization of components can be a clear, do not need to submit test results at 5280M4.

Question 12:

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```

Answer:

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Question 13:

It has been mentioned in the notification

After parallelization and optimization, the final program should be tested with the Workload1 case on onecomputing node in the CPU+MIC hybrid cluster (the remote testing platform) provided by the organizationcommittee.

But.

In one node how use 2 MIC cards?

Can I use 3 CPU+MIC nodes for the problem?

Answer:

There are several different questions in our contest, each of which may have different requirements. But for our gridding question, you are required to use only one node in the CPU+MIC hybrid cluster.

Question 14:

Do we have OpenCL installed on the remote testing platform?

Answer:

We have installed OpenCL on the platform.

Question 15:

Can you provide the iFort compiler on the cluster?

Answer:

iFort compiler has been installed

Question 16:

Would you please allow me to test my single-thread program on the login node temporarily?

Answer:

You can test a single-thread program on the login node if the system is free.

Question 17:

I found out that we can change several things in the *.namd of a workload to tune the performance. Are we allowed to do so for the preliminary question, or just stick with the original input config?

Answer:

In preliminary contest, the *.namd (configure file) could not be changed.