CrystaX NDK - Bug #1360

CRYSTAX_PANI: issetugid() not implemented!!! when calling boost::locale::conv::to_utf (10.3.1)

04/06/2016 03:21 PM - Karol Trojanowski

Status:	Closed		**Start date:**	04/06/2016
Priority:	High		**Due date:**	
Assignee:	Dmitry Moskalchuk		**% Done:**	100%
Category:	libcrystax		**Estimated time:**	0.00 hour
Target version:	11.0.0			
CPU Architecture:	arm		**Android version:**	4.2 (android-17), 5.0 (android-21)
Host OS:	Linux		**CrystaX Version:**	10.3.1
Toolchain:	gcc-5			

Description

Hello and thank you for this God-sent NDK!

When converting from ISO-8859-* to UTF-8 with Boost.Locale's to_utf function, the program run from the adb shell produces the error message:
CRYSTAX_PANI: issetugid() not implemented!!!

This is on 10.3.1 Linux x86, armeabi-v7a

This is as much as I could narrow the problem. Somehow the backend (iconv?) is calling issetugid. I haven't managed to pinpoint it exactly in the backend.

Thank you for any advice on how to resolve this issue.

History

#1 - 04/07/2016 05:29 PM - Dmitry Moskalchuk

Yes, issetugid is not implemented in libcrystax. When it's called, it prints error message to stderr and abort application. Honestly speaking, it's unclear how to properly implement this function, since its definition is unclear too. According to the documentation, it's purpose is indication of the fact that process was "tainted", which is very foggy.

Anyway, we're going to fix it in upcoming 11.0 release, where we'd get rid of hybrid libcrystax+bionic scheme, keeping only libcrystax in place. Meanwhile, you can work around this by defining own version of issetugid somewhere in your code:

```
#ifdef __cplusplus
extern "C"
#endif
int issetugid()
{
    return 0;
}
```

#2 - 04/11/2016 11:04 AM - Karol Trojanowski

Thank you for your response, Dmirtry.

I'm glad that you're working on the issue. Unfortunately the workaround you recommended does not seem to work for me. Where should the function be linked to for libcrystax to "see" it?

Thank you for your help.

#3 - 04/11/2016 05:17 PM - Dmitry Moskalchuk

Karol Trojanowski wrote:

> I'm glad that you're working on the issue. Unfortunately the workaround you recommended does not seem to work for me. Where should the function be linked to for libcrystax to "see" it?

Hmm, maybe I miss something... Could you provide minimal example where this problem is reproduced? This workaround should work generally, but in some cases there might be conditions (such as load order) preventing it. I could say more if you'd share some example where I could reproduce the problem.

#4 - 04/12/2016 02:08 PM - Karol Trojanowski

Dmitry Moskalchuk wrote:

> Hmm, maybe I miss something... Could you provide minimal example where this problem is reproduced? This workaround should work generally, but in some cases there might be conditions (such as load order) preventing it. I could say more if you'd share some example where I could reproduce the problem.

Here you go:
issetugidtest.cpp

```
#include <boost/locale.hpp>
#include <string>
#include <iostream>
extern "C" int issetugid() { return 0; }
int main()
{
    using boost::locale::conv::to_utf;
    using namespace std;
    auto data = vector<uint8_t>{ 0xCA, 0xC1, 0xCB, 0xCF, 0xC3, 0xC5, 0xD1, 0xCF, 0xD0, 0xCF, 0xD5, 0xCB, 0xCF,
 0xD3, 0x00 };
    auto out_t = u8"ΚΑΛΟΓΕΡΟΠΟΥΛΟΣ";
    string text;
    copy(begin(data), end(data), back_inserter(text));
    auto encoding = string("ISO-8859-7");
    auto ret = to_utf<char>(text, encoding);
    assert(out_t == ret);
    return 0;
}
```

Android.mk

```
LOCAL_PATH := $(call my-dir)
NDK_TOOLCHAIN_VERSION := 5
include $(CLEAR_VARS)
LOCAL_MODULE     := issetugidtest
LOCAL_STATIC_LIBRARIES := boost_system_static boost_locale_static
LOCAL_CPPFLAGS += -std=c++14 -fexceptions -Os
LOCAL_SRC_FILES := issetugidtest.cpp
include $(BUILD_EXECUTABLE)
$(call import-module,boost/1.59.0)
```

Application.mk

```
APP_ABI := armeabi-v7a
APP_PLATFORM := android-16
APP_STL := gnustl_static
```

After building:

```
$ adb push libcrystax.so /data
$ adb push issetugidtest /data
$ adb shell LD_LIBRARY_PATH=/data /data/issetugidtest
CRYSTAX_PANI: issetugid() not implemented!!!
```

#5 - 04/12/2016 02:30 PM - Dmitry Moskalchuk

Karol Trojanowski wrote:

> Here you go:

Thank you for example. As far as I see, defining issetugid helped, as I said – just because in your example it doesn't crash with message indicating that issetugid is not implemented. Commenting out own issetugid implementation bring CRYSTAX_PANI message back, so workaround I initially suggested is definitely working, as expected.

However, there is another crash, which happens somewhere inside iconv_open. This is definitely bug in libcrystax, so I'm going to figure out what's wrong there. Thank you for report.

#6 - 04/12/2016 02:30 PM - Dmitry Moskalchuk

- Category changed from boost to libcrystax

- Priority changed from Normal to High

#7 - 04/12/2016 02:31 PM - Dmitry Moskalchuk

- Status changed from Open to In Progress

#8 - 05/05/2016 01:13 PM - Dmitry Moskalchuk

Here is corresponding test case.

#9 - 05/20/2016 08:40 PM - Dmitry Moskalchuk

- Status changed from In Progress to Closed

- % Done changed from 0 to 100

Crash on call of issetugid fixed in master branch. Crash on call of iconv_open is fixed too; however, iconv_open now always return error since it need to have conversion database for work, which is not present on Android. This is separate task though, so I've created new ticket #1398 for it.

Closing this ticket since example code doesn't crash anymore. Instead, it throws C++ exception which outer code can catch and handle. Results of this fix will appear in build #854 at https://dl.crystax.net/builds/.