
Subject: Re: Writing PNG file in pure IDL with metadata
Posted by [andrewcool777](#) on Sun, 13 Dec 2015 07:53:32 GMT
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On Wednesday, 9 December 2015 08:22:38 UTC+10:30, Edward Hyer wrote:
> On Monday, December 7, 2015 at 7:16:35 PM UTC-8, andrew...@gmail.com wrote:
>> On Thursday, 22 October 2015 03:43:41 UTC+10:30, Jim P wrote:
>>> On Tuesday, October 20, 2015 at 5:28:09 AM UTC-6, andrew...@gmail.com wrote:
>>>> On Tuesday, 20 October 2015 21:53:42 UTC+10:30, Mark Hadfield wrote:
>>>> > On Tuesday, 20 October 2015 20:39:13 UTC+13, andrew...@gmail.com wrote:
>>>> > > Hi All,
>>>> > >
>>>> > > I have a bunch of Canon RAW .CR2 files that I'd like to transmogrify
>>>> > > into PNG files with nice informative metadata embedded in them.
>>>> > >
>>>> > > Unfortunately IDL's inbuilt READ_PNG and WRITE_PNG don't know that PNG files can
take metadata, and it looks like I'll be old, fat and bald before they do.
>>>> > > Wait, I am old, fat and bald... :-(
>>>> > >
>>>> > > Anyway, I wondering if anyone has invented this particular wheel before.
>>>> > > I'd be happy to work with a pure IDL write routine, or some method of Spawning off a
command to a 3rd party program.
>>>> > >
>>>> > > TIA,
>>>> > >
>>>> > > Andrew
>>>> >
>>>> > ImageMagick should do this:
>>>> >
>>>> > <http://www.imagemagick.org/Usage/basics/#attributes>
>>>> >
>>>> > It's available on Linux, obviously, and on Windows via Cygwin. I haven't used
ImageMagick for this purpose but I do regularly use it from IDL for format conversion (usually on
windows via Cygwin).
>>>>
>>>> Thanks Mark. I was thinking I'd have to wait for a reply until the Yanks woke up, but I forgot
about you worthy New Zealanders... ;-)
>>>>
>>>> Andrew
>>>
>>> Andrew,
>>>
>>> Though I can't share it, I wrote a procedure that supports writing both zTXt and tEXt to
existing PNG files in fewer than 200 lines of IDL including lots of comments. It could be reduced
even more with ZLIB_COMPRESS that was introduced to IDL since my original effort. I had to
hack that with a temp file using /COMPRESS at the time.
>>>
>>> The only remotely tricky part of the code is the application of the CRC. You can find the

reference C implementation of the CRC here in Section 3.4:

<http://www.libpng.org/pub/png/spec/1.2/PNG-Structure.html#CR C-algorithm>

>>>

>>> I'd bet you can slap together a working version in less than an hour, which is significantly less time than you might wait for the feature to show up in a released version of IDL.

>>>

>>> Jim P

>>> "I work for Harris, but speak not for the Corporation"

>>

>> Thanks Jim,

>>

>> Yes, I eventually bit the bullet and wrote the whole kit 'n' kaboodle in IDL,
>> without any calls to external libraries.

>>

>> So, it's not the fastest PNG writer you'll ever see, but it does write out
>> a standard format Metadata header with our customised fields, and the resulting files can be
>> read by 3rd party PNG readers.

>>

>> It would still be nice to see IDL handle metadata reading and writing for all image formats that
>> support metadata.

>>

>> Cheers,

>>

>> Andrew

>

> Andrew,

>

> I'm impressed you went through with this. A question: what 3rd party applications have you
> encountered that can get at the metadata in a PNG file? The only one I know of is the
> aforementioned ImageMagick.

Hi Ed,

I'd love to say that IDL could access the PNG metadata, but of course it can't. I've had a change
request in for quite some time for RSI/Kodak/Exelisvis/Harris
to extract their digit and fix this.

I generate about 32,000 PNG files a day that are uploaded to my hobby astronomy weather site at
www.skippysky.com.au (all in IDL), and professionally I study airglow where the main app I use is
the software from Keo Scientific in Calgary that drives our airglow camera. We have a need to
insert customised metadata fields unique to our data collection, and also to convert other images
from various formats into PNG to fit into our data processing workflow.

The creation of PNG files can happen in batch jobs, so the fact that my IDL PNG writer makes a
snail look fast is of no great concern.

Sure, I'd still like IDL's PNG routines to be brought kicking and screaming into the 21st Century,
but I may be retired by then... ;-)

Andrew
