
Subject: MSVC 10 to Upp conversion

Posted by [nneilson](#) on Mon, 30 May 2011 20:22:03 GMT

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I am trying to convert a command line app I got working in MSVC 10 into Upp. Then I will make a GUI for it.

It was originally written for Linux in 2005 and a patch for Windows a year or so later. It has not been maintained since then AFAIK.

After making a package in MyApps with the code, making a .cpp file and getting the linking taken of (so far) there were many warnings regarding deprecation (I think that can be handled).

There were several errors.

I did a search and replace for `strcasecmp` to `strcmp`, I can handle the case later.

Here are the remaining errors and the code:

```
C:\MyApps\GUItile\tilepack.cpp(61) : error C2065: 'DIR' : undeclared identifier
C:\MyApps\GUItile\tilepack.cpp(61) : error C2065: 'd' : undeclared identifier
C:\MyApps\GUItile\tilepack.cpp(66) : error C2065: 'd' : undeclared identifier
C:\MyApps\GUItile\tilepack.cpp(66) : error C3861: 'opendir': identifier not found
C:\MyApps\GUItile\tilepack.cpp(67) : error C2065: 'd' : undeclared identifier
C:\MyApps\GUItile\tilepack.cpp(68) : error C2065: 'd' : undeclared identifier
C:\MyApps\GUItile\tilepack.cpp(68) : error C3861: 'readdir': identifier not found
C:\MyApps\GUItile\tilepack.cpp(68) : fatal error C1903: unable to recover from previous error(s);
st
opping compilation
```

```
// code that throws the errors
```

```
void ScanDatasetR(const char *path) {
    DIR *d;
    struct dirent *de;
    int l, x, y;
    string s;

    d = opendir(path);
    if (!d) return;
    while (de = readdir(d)) {
        if ((de->d_type == DT_DIR) && (de->d_name[0] != '.')) ScanDatasetR((string(path) +
string(de->d_name) + "/").c_str());
        if (de->d_type == DT_REG) {
            s = de->d_name;
            if (sscanf(s.substr(0, 2).c_str(), "%x", &l) && sscanf(s.substr(2, 8).c_str(), "%x", &x) &&
sscanf(s.substr(10, 8).c_str(), "%x", &y)) {
```

```
    bm[(static_cast<unsigned __int64>(l) << 50) + (static_cast<unsigned __int64>(y >> 7) << 25) +
(x >> 7)].push_back((x & 0x7f) + ((y & 0x7f) << 7));
    }
}
}
closedir(d);
}
```

I am not that proficient with pointers so help would be appreciated.

With the "unable to recover from previous error(s); stopping compilation" there will probably be more later but just taking it a step at a time.

edit: I don't want to use MSVC for the GUI or anything else if it can be avoided.
I like Upp.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Mon, 30 May 2011 20:54:49 GMT
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Hello Neil

If you know what that function does it is very easy to translate it to U++.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Mon, 30 May 2011 21:05:42 GMT
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Here is a .zip of that package ~2MB.
<http://www.nlneilson.com/apps/GUItiler.zip>

I think ScanDatasetR is the list of files that will be tiled.

Forgot to mention this links to FWTools 2.4.7 /include and /lib
<http://fwtools.maptools.org/>

and also in INCLUDE directories
C:\MyApps\GUItiler\win32dummy
C:\MyApps\GUItiler\win32dummy\sys

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Mon, 30 May 2011 23:39:07 GMT
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Doing a google search, this forum and the Upp Help I came up with a few possibilities.

opendir is a C++ function in the direct.h header

In Upp apparently that is only functions defined in an app
MSVC picked up the C++ opendir but Upp does not.

```
#include <direct.h>
```

Adding this to tilepack.cpp and in the .upp file didn't help but didn't give an error for the #include.

In Upp 3470 after setting up the links in both and compiling with MSC9 and MSC10 the results were the same.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Tue, 31 May 2011 02:43:43 GMT
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opendir just iterates through all files in a directory and sub directories.

There must be some function in Upp that does this.

Subject: Re: MSVC 10 to Upp conversion
Posted by [dolik.rce](#) on Tue, 31 May 2011 06:03:56 GMT
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nneilson wrote on Tue, 31 May 2011 04:43 opendir just iterates through all files in a directory and sub directories.

There must be some function in Upp that does this. FindFile object is usually used for this, something like:

```
void IterateThroughDirs(const String& dir){  
    for(FindFile ff(AppendFileName(dir, "*")); ff; ff.Next()) {  
        if(ff.IsFolder())  
            IterateThroughDirs(ff.GetName()); // call itself on the subdirectory  
        else if(ff.IsFile()) {  
            // process the file ff.GetName() here  
        }  
    }  
}
```

Honza

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Tue, 31 May 2011 06:40:34 GMT
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Hello Neil

Using Honza code and replacing this stuff:

```
if (sscanf(s.substr(0, 2).c_str(), "%x", &l) && sscanf(s.substr(2, 8).c_str(), "%x", &x) &&
    sscanf(s.substr(10, 8).c_str(), "%x", &y)) {
    bm[(static_cast<unsigned __int64>(l) << 50) + (static_cast<unsigned __int64>(y >> 7) << 25) +
        (x >> 7)].push_back((x & 0x7f) + ((y & 0x7f) << 7));
}
```

with some more readable U++ code you will have it all, and more portable .

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Tue, 31 May 2011 10:29:09 GMT
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Thanks Honza and Koldo

I use something like your example in Java, this just counts but is about the same for processing files rather than tNum++;

It's just a simple loop back if it's a directory rather than a file.

```
private void countFiles(File sourceDirectory){
    for (File f : sourceDirectory.listFiles()) {
        if (f.isDirectory()) countFiles(f);
        if (f.isFile()) tNum++;
    }
}
```

I thought there may be something like the dos findfirst-findnext, Python Walk, etc. rolled into a function like opendir in Upp or being able to use opendir, I thought that was a C++ function.

Those two lines do look complicated but breaks down to

```
if(... && ... && ...){
    ...;
}
```

This is mostly with numbers which I am fair with or file names.

That shouldn't be a problem unless Upp doesn't use sscanf, static_cast, push_back, etc..

I will get it to iterate through the files and see what happens.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Tue, 31 May 2011 19:20:42 GMT
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Hello Neil

For example I would replace

```
string s;  
int l;  
...  
sscanf(s.substr(0, 2).c_str(), "%x", &l)
```

with

```
String s;  
int l;  
...  
l = ScanInt(s.Mid(0, 2), 0, 16);
```

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Tue, 31 May 2011 20:06:19 GMT
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Hi Koldo

Thanks for the suggestion.

There are many changes I would like to make or may to need to change to get it to compile.

"l = ScanInt(s.Mid(0, 2), 0, 16);" does look much better.

Searching the package for "opendir" there is only the one instance.
Will get that changed today.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Wed, 01 Jun 2011 00:59:42 GMT
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Finally got around to starting the changes to iterate through the files and noticed that has all ready been done with findfirst/findnext.

I used the original tilepack.cpp and tinkered with these without any luck.

```
#ifdef WIN32  
#else
```

```
#endif
```

Does Upp treat these differently?

```
#ifdef WIN32
```

```
void ScanDatasetR(const char *path) {
```

```
    struct _finddata_t c_file;
```

```
    long hFile;
```

```
    int l, x, y;
```

```
    string s;
```

```
    string filespec;
```

```
    filespec = string(path) + "\\*.*";
```

```
    hFile = _findfirst( filespec.c_str(), &c_file ); // _findfirst
```

```
    if( hFile == -1L )
```

```
        return;
```

```
    do {
```

```
        if ((c_file.attrib & _A_SUBDIR) && (c_file.name[0] != '.'))
```

```
            ScanDatasetR((string(path) + string(c_file.name) + "\\").c_str());
```

```
        else if (c_file.attrib & _A_NORMAL) {
```

```
            s = c_file.name;
```

```
            if (sscanf(s.substr(0, 2).c_str(), "%x", &l) && sscanf(s.substr(2, 8).c_str(), "%x", &x) &&
```

```
sscanf(s.substr(10, 8).c_str(), "%x", &y)) {
```

```
            bm[(static_cast<unsigned __int64>(l) << 50) + (static_cast<unsigned __int64>(y >> 7) << 25) +  
(x >> 7)].push_back((x & 0x7f) + ((y & 0x7f) << 7));
```

```
        }
```

```
    }
```

```
    } while( _findnext( hFile, &c_file) == 0 ); // _findnext
```

```
    _findclose( hFile );
```

```
}
```

```
#else
```

```
void ScanDatasetR(const char *path) {
```

```
    DIR *d;
```

```
    struct dirent *de;
```

```
    int l, x, y;
```

```
    string s;
```

```
    d = opendir(path); // opendir
```

```
    if (!d) return;
```

```
    while (de = readdir(d)) {
```

```
        if ((de->d_type == DT_DIR) && (de->d_name[0] != '.')) ScanDatasetR((string(path) +  
string(de->d_name) + "/").c_str());
```

```
        if (de->d_type == DT_REG) {
```

```
            s = de->d_name;
```

```
            if (sscanf(s.substr(0, 2).c_str(), "%x", &l) && sscanf(s.substr(2, 8).c_str(), "%x", &x) &&
```

```
sscanf(s.substr(10, 8).c_str(), "%x", &y)) {
```

```
    bm[(static_cast<unsigned __int64>(l) << 50) + (static_cast<unsigned __int64>(y >> 7) << 25) +
(x >> 7)].push_back((x & 0x7f) + ((y & 0x7f) << 7));
    }
}
}
closedir(d);
}
#endif
```

edit: I did a search in the package for WIN32
Other than in tilepack.cpp the only other is in the main (GUtiler.cpp)
#ifndef WIN32

File Attachments

1) [tilepack.cpp](#), downloaded 393 times

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Wed, 01 Jun 2011 06:06:32 GMT
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Hello Neil

For me it is very easy to convert the `_findfirst`, `_findnext`, `_findclose` to `FindFile` class as indicated by Honza, ad the code is more clear.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Wed, 01 Jun 2011 06:37:38 GMT
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Hi Koldo

Yes that would be clear and many things will be changed once I can compile and run it.

Apparently I got over the iterate files issue.

I found these links:

<http://www.mail-archive.com/fossil-users@lists.fossil-scm.or/g/msg02331.html>
<http://msdn.microsoft.com/en-us/library/b0084kay.aspx>

Put an underscore before each WIN32 to `_WIN32`

No error as before.

Now I have
tilepack.obj : error LNK2005: `_main` already defined in GUtiler.obj

Creating library C:\upp\out\MyApps\MSC9.Gui.Mt\GUtiler.lib and object C:\upp\out\MyApps\MSC9.Gui.Mt\GUtiler.exp

and

"fatal error LNK1120: 117 unresolved externals"

At least I am not getting "unable to recover from previous error(s); stopping compilation"

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Wed, 01 Jun 2011 08:10:43 GMT
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This is what this app does:

1. Change the format of geo-referenced images to WSG84 if necessary.
2. Merge many images into one big mosaic.
3. Tiles the large image into a tiled pyramid for different resolutions of 512x512 pixels. The highest resolution level has the same resolution as the original images. Then 4 of those images are made into a one step lower resolution and so on.
This is the way it is done for Google Earth and many others.

All of this I can do directly with FWTools or OSGeo4W

EXCEPT the tiling and overviews.

The lowest level of resolution (lzt) default size is 180 degrees with gdal2tiles, which is a pain and often some resolution is lost.

The images I use most are the U.S. FAA Charts and I have been using dstile to tile them with and can specify the lzt (LevelZeroTileDelta) as 1, 2, 5 or 10 deg.
The NASA WorldWind project uses an lzt of 36 deg for Satellite images.

Part of a response from the person that patched the original dstile to work in Windows was this:
Quote:I suggest letting dstile fall into legacy and using this route instead.
The "new" way is geared toward smaller images, doing it on the fly and NO control over the lzt.

I tinkered with gdal2tiles for several days and got that to work for the format and naming convention but the resolution was less and that was only with an lzt of 180 deg.

It took some time to get the code to compile and run in MSVC 10 but I don't want to get tied into that to make changes.

Maybe if I can get the linking problems resolved I can do this in Upp which I prefer.

Subject: Re: MSVC 10 to Upp conversion

Posted by [nneilson](#) on Wed, 01 Jun 2011 09:29:36 GMT

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Here are a few of the errors I am getting.

I have everything linked I can think of, include, lib, bin

These all seem to be in FWtools and I shouldn't have to get in there and change code.

Maybe it's time to give this attempt a rest.

Tiler.obj : error LNK2001: unresolved external symbol "public: class GDALDataset * __thiscall GDALDri

ver::Create(char const *,int,int,int,enum GDALDataType,char * *)"

(?Create@GDALDriver@@@QAEPAVGDAL

Dataset@@@PBDHHHW4GDALDataType@@@PAPAD@Z)

Overviews.obj : error LNK2019: unresolved external symbol "public: enum GDALDataType

__thiscall GDALR

asterBand::GetRasterDataType(void)"

(?GetRasterDataType@GDALRasterBand@@@QAE?AW4GDALDataType@@@XZ)

referenced in function "protected: void __thiscall Overviews::BuildOverviewsR(class

TileTree::Nod

e *,int,int,int)" (?BuildOverviewsR@Overviews@@@IAEXPVNode@TileTree@@@HHH@Z)

TileProcessor.obj : error LNK2001: unresolved external symbol "public: enum GDALDataType

__thiscall G

DALRasterBand::GetRasterDataType(void)"

(?GetRasterDataType@GDALRasterBand@@@QAE?AW4GDALDataType@@@

XZ)

Overviews.obj : error LNK2019: unresolved external symbol "public: class GDALRasterBand *

__thiscall

GDALDataset::GetRasterBand(int)"

(?GetRasterBand@GDALDataset@@@QAEPAVGDALRasterBand@@@H@Z) referenc

ed in function "protected: void __thiscall Overviews::BuildOverviewsR(class TileTree::Node *,int,

int,int)" (?BuildOverviewsR@Overviews@@@IAEXPVNode@TileTree@@@HHH@Z)

TileProcessor.obj : error LNK2001: unresolved external symbol "public: class GDALRasterBand *

__thisc

all GDALDataset::GetRasterBand(int)"

(?GetRasterBand@GDALDataset@@@QAEPAVGDALRasterBand@@@H@Z)

Tiler.obj : error LNK2001: unresolved external symbol "public: class GDALRasterBand * __thiscall

GDAL

Dataset::GetRasterBand(int)"

(?GetRasterBand@GDALDataset@@@QAEPAVGDALRasterBand@@@H@Z)

Overviews.obj : error LNK2019: unresolved external symbol "public: int __thiscall

GDALDataset::GetRas

terCount(void)" (?GetRasterCount@GDALDataset@@@QAEHXZ) referenced in function

"protected: void __t

hiscall Overviews::BuildOverviewsR(class TileTree::Node *,int,int,int)"

(?BuildOverviewsR@Overvie

ws@@@IAEXPVNode@TileTree@@@HHH@Z)

TileProcessor.obj : error LNK2001: unresolved external symbol "public: int __thiscall

GDALDataset::Ge

```
tRasterCount(void)" (?GetRasterCount@GDALDataset@@QAEHXZ)
Warper.obj : error LNK2001: unresolved external symbol "public: int __thiscall
GDALDataset::GetRaster
Count(void)" (?GetRasterCount@GDALDataset@@QAEHXZ)
Overviews.obj : error LNK2019: unresolved external symbol "public: int __thiscall
GDALDataset::GetRas
terYSize(void)" (?GetRasterYSize@GDALDataset@@QAEHXZ) referenced in function
"protected: void __t
hiscall Overviews::BuildOverviewsR(class TileTree::Node *,int,int,int)"
(?BuildOverviewsR@Overvie
ws@@IAEXPVNode@TileTree@@HHH@Z)
TileProcessor.obj : error LNK2001: unresolved external symbol "public: int __thiscall
GDALDataset::Ge
tRasterYSize(void)" (?GetRasterYSize@GDALDataset@@QAEHXZ)
Overviews.obj : error LNK2019: unresolved external symbol "public: int __thiscall
GDALDataset::GetRas
terXSize(void)" (?GetRasterXSize@GDALDataset@@QAEHXZ) referenced in function
"protected: void __t
hiscall Overviews::BuildOverviewsR(class TileTree::Node *,int,int,int)"
(?BuildOverviewsR@Overvie
ws@@IAEXPVNode@TileTree@@HHH@Z)
TileProcessor.obj : error LNK2001: unresolved external symbol "public: int __thiscall
GDALDataset::Ge
tRasterXSize(void)" (?GetRasterXSize@GDALDataset@@QAEHXZ)
Overviews.obj : error LNK2019: unresolved external symbol "public: class GDALDriver * __thiscall
GDAL
DriverManager::GetDriverByName(char const *)"
(?GetDriverByName@GDALDriverManager@@QAEPVGDALDriv
er@@PBD@Z) referenced in function "public: __thiscall
```

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Wed, 01 Jun 2011 10:09:45 GMT
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Hello Neil

The compiler errors in your message are very related to the external library you want to include.

For trying to help you please send a file with all inside ready to be compiled (U++, packages, external includes, libs, dlls, ...). If the compressed size is big to be posted you can put the file in some public file server.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Wed, 01 Jun 2011 10:35:56 GMT

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Hi Koldo

Here is a .zip as of today.

<http://www.nlneilson.com/apps/GUItiler.zip> ~2MB

This is what it is linked to, FWTools 2.4.7

<http://home.gdal.org/fwtools/FWTools247.exe> ~22MB

I have this installed on C:\FWTools2.4.7

If you all ready have that installed somewhere else just change the build paths.

Thanks for looking at it, I felt I was running into a dead end street.

edit: If it would be of any help for checking the links or whatever I zipped and uploaded the MSVC 10 package.

<http://www.nlneilson.com/apps/DsTileQtGUI.zip> ~21MB

That also links to FWTools.

Subject: Re: MSVC 10 to Upp conversion

Posted by [koldo](#) on Wed, 01 Jun 2011 15:19:43 GMT

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Hello Neil

Include fixed package. It runs using MSC9 (because of the libs) but compiles in MinGW too.

Look to the changes, many of them labeled with "// KOLDO".

The original source uses std and many linux functions.

Look at the main(). It is replaced with a GUI_APP_MAIN but without handling command line args (this work is for you).

Package organizer has been changed too, adding the libs.

Please include the include, lib and bin ("executable directories") paths in "Build methods".

The changes have been rough, just to compile and run. Now you would have to polish it all, giving the package a nice U++ style .

File Attachments

1) [GUItiler.7z](#), downloaded 307 times

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Wed, 01 Jun 2011 21:05:47 GMT
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Great!

Much appreciated.

Adam Nowacki (nowak) did the original code for Linux and Tisham Dhar (whatnick) did the conversion to work with Windows.
That is why the Linux code is still there.

The command line args are straight forward, most are just passed to GDAL.
The main arg I was concerned about is for the tile size.
gdal2tiles ONLY handles an lzt of 180 deg, dstile takes an arg for the size.

Now I can make a Upp GUI that handles the args and does some pre-checking.
To merge and tile 74 images it may take 5 hours.
To have it kick out because of a problem with one of the last few images is a pain,
the set has to be done as a whole.

Thanks Koldo!

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Wed, 01 Jun 2011 22:41:16 GMT
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Hi Koldo

Your package compiled the first time without errors, great.

A few changes I noticed was

```
#include "win32dummy/unistd.h"
```

```
#include "win32dummy/dirent.h"
```

and in the .upp file

library

```
"bgd gdal_i geos_i geotiff_i iconv libtiff_i libxml2 mapserver_i ogdi_32b1 ogdi_fw proj_i";
```

That all make sense but would not have figured that out myself.

The number of arg can be quite large like this:

```
dstile.exe tile --lzt 10.0 --wwcache --overviews 48States HalifaxN.tif HalifaxS.tif MontrealN.tif  
MontrealS.tif ...
```

for the images/files to be merged and tiled (I often do 74) plus ~6 more options in the existing code

and I will be adding a few more with changes.

With no args it just lists the options.

I can handle that.

The biggest problem was getting the existing code to compile in Upp.

It will be interesting to see what other changes you have made.

Thanks again.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Thu, 02 Jun 2011 06:36:15 GMT
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Hello Neil

- About win32dummy

After trying unsuccessfully to compile the package with MSC I realize there was that folder with include files designed for MSC and windows in general so I just used it. Then MSC compiled well.

- About the library

In Build methods you say the compiler in which folders are the libraries, but in Package organizer you say the compiler which are the libraries to use.

- About the arg list

It is very easy. Just use CommandLine(). It returns a Vector<String>& with all the args.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Thu, 02 Jun 2011 09:12:28 GMT
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Hi Koldo

It's good you got it to compile in MSC. I had links according to my setup.

Quote:- About the library

In Build methods you say the compiler in which folders are the libraries, but in Package organizer you say the compiler which are the libraries to use.

I am a bit confused on this. In the IDE I did have to set the Build paths with Setup->Build methods for MSC9

and then do the same for MSC10. By "Package organizer" are you referring to the .upp file?

About the args the change from
`int main(int argc, char *argv[]) {`

```
to
GUI_APP_MAIN
{
```

was a bit of a change as I am not used to that.

The glitch I am having now is with no arguments.
How this app is set up to work is the dstile.exe or Guitiler.exe is placed in the FWTools bin directory.

Then the FWTools dos box is opened and then dstile.exe plus any options are typed on the command line.

If just dstile.exe with no args then just the 5 lines as from the code at lines #232 to #236 are printed:

```
"RUN: %s command ...\n"
" tile\n"
" overviews\n"
" prep\n"
" pack\n"
```

The dstile.exe from your MSC compile should work that way.

My Guitiler.exe from the U++ compile does not.
even after setting argv[0] and argv[1] = "";

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Thu, 02 Jun 2011 09:37:23 GMT
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Hello Neil

It's good you got it to compile in MSC. More than that. It only links with MSC.

By "Package organizer" are you referring to the .upp file? In Project/Package organizer menu or by right clicking the package in the left vertical window you have the compiling and linking options and libraries. All those settings are saved in .upp file .

About command line management, just use U++ CommandLine() and remove all references to argc and argv[]. It is documented and works very well.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Thu, 02 Jun 2011 10:21:46 GMT

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Hi Koldo

I will see what documentation and examples I can find on "CommandLine()"

Did you try your U++ compiled GUItiler.exe in FWTools without args and get the 5 lines printed?

I don't understand what you mean by this:

Quote:More than that. It only links with MSC.

There are functions in the dstile code that relies on the FWTools code.

Subject: Re: MSVC 10 to Upp conversion

Posted by [nneilson](#) on Thu, 02 Jun 2011 11:15:19 GMT

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merged to previous post

Subject: Re: MSVC 10 to Upp conversion

Posted by [koldo](#) on Thu, 02 Jun 2011 11:53:56 GMT

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Hello Neil

With MinGW I get a lot of linking problems.

Subject: Re: MSVC 10 to Upp conversion

Posted by [nneilson](#) on Thu, 02 Jun 2011 23:54:20 GMT

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Hi Koldo

I decided to go a slightly different route.

I will make the U++ GUI in a separate app that will call the .exe from the existing code.

I renamed the existing package to ntile and replaced the

```
int main(int argc, char *argv[]) {
```

I understand that better.

Other than that I just pulled the ntile.cpp into Eclipse to correct the indentation.

Compiling in U++ I just get one link error:

LIBCMT.lib(wincrt0.obj) : error LNK2019: unresolved external symbol _WinMain@16 referenced in function

___tmainCRTStartup

<http://www.nlneilson.com/apps/ntile.zip>

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Fri, 03 Jun 2011 01:26:26 GMT
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Hi Koldo

I did a google search for "tmainCRTStartup" and found this:
<http://social.msdn.microsoft.com/Forums/en/vclanguage/thread/14e85604-6929-4707-a22e-8cdf596926a6>

In the IDE I clicked on the box that has "GUI MT and deleted the GUI.

It compiled without errors and opened a dos box and displayed the 5 lines mentioned above.

Thanks for the help, couldn't have done it on my own.

edit: Tried to merge and tile 2 images.
It started OK and displayed the args as it should then crashed.
Still have a few bugs to work out.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Sun, 05 Jun 2011 02:05:17 GMT
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Hi Koldo

I have a U++ GUI.

Work Dir is where the image files are that can be found with a file selector.
Out is a directory name typed in to save the tiled images to.
FWTools\bin shows if that can be linked, I have it at C:\ and some install under Program Files.
LZTD is where a value can be typed in.
OverViews is a button on by default that can be toggled if only the highest resolution is to be tiled rather than all levels.
File list is for the files to be merged and tiles. This just pulls up list or makes a list from a text file.
The list is usually much longer than the text box but can be scrolled or obtained with "select all->copy". If the files have been previously merged then there will only be one file shown.

Before processing the file list will be checked to see if all files are available.

I have not been able to get the converted code to work yet.

It's difficult to debug into files that are linked from FWTools but I can use the dstile.exe until getting the converted code to run in U++, that is where I would like to make changes in the code. I will try adding print statements to track the bug/s down.

It compiles without error (ntile.exe), passes the command line args to FWTools then Win crashes the app.

The dstile.exe, the original or the dstile.exe compiled with MSVC 10 works OK.

If will I try the "CommandLine()" in U++.

Some IDEs have an option to specify the command line args, how is that done in U++ (theIDE)?

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Sun, 05 Jun 2011 03:38:04 GMT
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Compiled in debug mode I get an error that says in the MS error box:
Debug Assertion Failed!
Program: C:\FWTool~1.7\bin\ntile
File: f:\dd\vctools\crt\self_x86\crt\src\close.c
Line: 47

Expression: (fh >=0&&(unsigned)fh <(unsigned)_nhandle)

I also tried this after copying HalifaxN.tif to the U++ output directory like I often do in Python for testing:

```
int main(int argc, char *argv[]) {  
// --lztsd 10.0 --wwcache --overviews Ont HalifaxN.tif  
argc = 8;  
argv[0] = "ntile";  
argv[1] = "tile";  
argv[2] = "--lztsd";  
argv[3] = "10.0";  
argv[4] = "--wwcache";  
argv[5] = "--overviews";  
argv[6] = "Ont";  
argv[7] = "HalifaxN.tif";
```

I get the same error as above.

Another issue doing it this way or with the U++ "CommandLine()" is

this opens in a regular dos box rather than the FWTools dos box.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Sun, 05 Jun 2011 04:58:58 GMT
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Hello Neil

To set program command line goto Debug/Run options/Program arguments.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Sun, 05 Jun 2011 08:35:46 GMT
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Thanks Koldo

That will help because each time a test run is made the output directory needs to be changed, Ont1, Ont2, Ont3, etc..

I just spent a couple hours brushing up and testing dos commands, that is similar to how the GUI will act for processing.

call "C:\FWTools2.4.7\setfw.bat" /K is all that is required to set up that environment.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Mon, 06 Jun 2011 21:57:14 GMT
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Hi Koldo

I am able to debug into the code now after hard coding the args and setting the environment with:
system ("C:/FWTools2.4.7/setfw.bat /K");

I have a U++ GUI I can later tie into this. (Honza helped with SelectDirectory())

Where I am getting the crash is at ~#164 Tiler.cpp
fl.Open(loc);

loc at that point is correct, a portion is "... _Ptr=2190390 "Ont/5/0442/0442_0351.jpg"..."
I don't know how or if that full line can be copied in U++.

With this placed just before the problem line

```
printf("%s", loc);  
fl.Open(loc);  
it prints <NULL>.
```

fl.open goes into syskit.cpp FileLock::Open where "fileName" parameter loc) is OK.
if (m_fd) close(m_fd);
is where it actually crashes.

If I comment that line out it seem to run OK for the base images.
When it gets to tiling the lower resolutions it crashes, probably just need to comment a line there also.

Is there something in U++ that is needed to lock/unlock?

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Tue, 07 Jun 2011 05:17:18 GMT
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Hello Neil

I do not understand this:
Quote:a portion is "... _Ptr=2190390 "0nt/5/0442/0442_0351.jpg"..."
I don't know how or if that full line can be copied in U++.

What is the problem?

About the rest it would be great if you could upload a simple sample package with it.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Tue, 07 Jun 2011 05:45:57 GMT
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In other IDEs a full line of text in the "Console" can be selected and copied. I don't know how that is done in U++.

So I just posted the pertinent part of that line.

I could upload the package but to run it needs a .tif file.

I will zip up the package and a small .tif (1.5MB) to test with.

The .tif files I usually work with are ~140MB.

It may take a few minutes to get that done and will edit this post with the link.

edit: Here is a .zip, it just replaces the previous:

<http://www.nlneilson.com/apps/ntile.zip>

In Debug->Options Working directory change that to where you place the .tif file.

In ntile.cpp #227 replace the location you have installed FWTools, the .bat file name should be the same and it needs the /K

In a few hours I will be heading up to my Ranch/Farm for a few days.

Apparently this cannot be debugged into the FWTools/gdal code.

The MS crash box showed an error re assertion and close. commented all the code that had "close" with small 'c'.

Runs OK with the overviews.
It does give a warning: Heap leaks detected !

Seems strange but if U++ can run it without problems it,s OK.

Now back to the GUI and tying that in.

One of the things I wanted to change in the original code was found and changed.

Thanks for the help Koldo.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Tue, 07 Jun 2011 13:59:55 GMT
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Hello Neil

Program compiles well but I get this error:
ERROR 4: Unable to open EPSG support file gcs.csv.
Try setting the GDAL_DATA environment variable to point to the directory containing EPSG csv files.

:

After playing with .bat files, I tried to force GDAL_DATA to the right folder, but the error always appear.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nneilson](#) on Thu, 09 Jun 2011 08:38:30 GMT
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Hi Koldo

We just got back tonight as something came up and had to get back early.

That is strange, I have not seen that error before.
I will look at that tomorrow.

Here is a .zip of ntile and also the GUI NLN_tile where ntile is included.
<http://www.nlneilson.com/apps/01.zip>

Here is how it is tied in:

```
void Work(){
FileOut out("nt.bat");
if(!out) {
    Exclamation("Unable to open [* " + DeQtf(cfgfile));
    Break();
}
out.PutLine("call cd C:\\0-Neil\\FAA\\2011\\Sectionals");
// out.PutLine("call ntile.exe tile --lztst 10.0 --wwcache --overviews 0nt5 LA_clip.tif"); // 2
// out.PutLine("pause"); // 2
out.Close();
system ("nt.bat");
ntile(????????);
```

It took me a while to figure this out:
#include "ntile.cpp"

ntile.exe has been working OK and when nt.bat is made it works with the GUI, here I just hard coded the data in the nt.bat file, renamed main in ntile.cpp to ntile and commented the argv hard coded in ntile.cpp and un commented this line:
out.PutLine("call ntile.exe tile --lztst 10.0 --wwcache --overviews 0nt5 LA_clip.tif");

I have not figured out how to pass the argv from the GUI to the ntile function.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Thu, 09 Jun 2011 21:28:49 GMT
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Hi Koldo

Quote:ERROR 4: Unable to open EPSG support file gcs.csv.

It's not linked with FWTools\bin.

How the original dstile was used was dstile.exe was placed in FWTools\bin. Try placing the ntile.exe and the dstile.exe in the bin and you can try both.

Then right clicking on the FWTools icon then change Properties->Start in: to the directory the image files are in.

Then just open FWTools with a left click and enter the command line in the FWTools dos box that is opened:

```
dstile.exe tile --lztsd 10.0 --wwcache --overviews Ont LA_clip.tif
```

Changing dstile.exe on the command line to the U++ compiled ntile.exe works the same way except it has the changes in the code.

To debug the code in U++ this was done:

In the FWTools Properties->Target: it has:

```
C:\WINDOWS\system32\cmd.exe /K "C:\FWTools2.4.7\setfw.bat"
```

This sets the environment.

So in the ntile code I added this so no changes to the FWTools properties need to be changed:

```
system("C:/FWTools2.4.7/setfw.bat /K");
```

Then hard coded the args.

To run from the U++ GUI the hard coded args were commented.

Making the nl.bat to pass the args the line

```
out.PutLine("call cd C:\\0-Neil\\FAA\\2011\\Sectionals");
```

had to have the double \\ instead of the single \.

The problem of doing it that way is it is run by the .bat file using the ntile.exe that has been placed in FWTools\bin and there is no way to pass data back to the GUI.

And there is no way to debug the ntile code included with the GUI package because it is not used.

Maybe calling the ntile function included with the GUI code:

```
ntile("tile --lztsd 10.0 --wwcache --overviews Ont LA_clip.tif");
```

is something I will try next.

Note that the ntile.exe placed in the FWTools\bin doesn't have any hard coded args, etc., just the code as compiled in MSVC 10 except when compiled in U++ some changes were made as far as the output format, etc..

Sorry my explanations and current code is lacking, still tinkering.

Your help with the linking, compiling in U++ is much appreciated.

Subject: Re: MSVC 10 to Upp conversion

Posted by [nneilson](#) on Thu, 09 Jun 2011 23:19:38 GMT

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Maybe just a basic GUI which does all the checking (I have not included that yet) and runs the ntile.exe placed in the FWTools\bin will work for now.

I just have the data for the nt.bat hard coded rather than GUI input but works OK. No progress

bar so a user just sees the progress in the dos box.

Just clicking File->Run tiler in N_tile works for my setup.

This will require a user to place ntile.exe in the FWTools\bin rather than have a stand alone GUI with ntile built in.

http://www.nlneilson.com/apps/N_tile.zip

Subject: Re: MSVC 10 to Upp conversion

Posted by [nlneilson](#) on Fri, 10 Jun 2011 01:36:02 GMT

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Note that all the GUIs has a label FWTools and an edit field that shows "OK".

This is intended to check that ntile.exe is in FWTools\bin or if the FWTools\bin is linked correctly if the GUI is a stand alone .exe with the ntile included.

The previous GUIs had a wide box to show any errors in the dos box that was on top of only the GUI, maybe putting a pause at the end would keep the whole box visible on error.

Subject: Re: MSVC 10 to Upp conversion

Posted by [nlneilson](#) on Fri, 10 Jun 2011 11:14:27 GMT

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koldo wrote on Tue, 07 June 2011 06:59Hello Neil

Program compiles well but I get this error:

ERROR 4: Unable to open EPSG support file gcs.csv.

Try setting the GDAL_DATA environment variable to point to the directory containing EPSG csv files.

:

After playing with .bat files, I tried to force GDAL_DATA to the right folder, but the error always appear.

This may be your problem with linking.

These may be necessary to run/debug in theIDE

Setup->Build methods

PATH C:\FWTools2.4.7\bin

INCLUDE C:\FWTools2.4.7\include

LIB C:\FWTools2.4.7\lib

Run options

Program arguments: C:\WINDOWS\system32\cmd.exe /K "C:\FWTools2.4.7\setfw.bat"

Working directory: Where you have placed the .tif file.

Have the args hard coded.

Many of these requirements have been eliminated in the ntile code in the GUI.

If the earlier ntile.exe is placed in FWTools\bin then none of the extra stuff is necessary.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Sat, 11 Jun 2011 07:02:57 GMT
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Some of the previous .zip files probably have errors as posted here:
http://www.ultimatepp.org/forum/index.php?t=msg&goto=32805&#msg_32805

Without doing anything other than setting the path for FWTools bin, include and lib in the IDE and compiling then placing the ntile.exe in the FWTools bin it works OK.

No changes to the FWTools properties, just open FWTools and cd to where images are and type ntile.exe with the args and it works OK.

Sorry for the problems and thanks again for the help getting the conversion and linking so it can be compiled in U++.

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Mon, 13 Jun 2011 11:06:57 GMT
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Hi Koldo

95% done, it does everything (and more) than what I have used the dstile for to merge and tile the U.S. FAA Charts for the last 3 years.

Here is a .zip with the two .exe and a help file.
http://www.nlneilson.com/apps/N_tile_01.zip

Thanks for the help getting the code converted enough to compile with U++.

Subject: Re: MSVC 10 to Upp conversion
Posted by [koldo](#) on Tue, 14 Jun 2011 07:17:00 GMT
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Sorry Neil

I am very busy these weeks so I cannot check your code.

Congratulations!, it seems you are closer ...

Subject: Re: MSVC 10 to Upp conversion
Posted by [nlneilson](#) on Tue, 14 Jun 2011 08:15:16 GMT
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Hi Koldo

I am just adding code for a .cfg file to save some of the settings and do additional checking.

If it was not for your help I would have given up and made changes to the tiling code in MSVC.

It's good to be able to do it in U++.

Thanks
