Subject: [SUCCESS] Struggle with Serial port class
Posted by jerson on Thu, 05 Aug 2010 05:55:19 GMT

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I have downloaded a serial port class from message 25665 by nixnixnix from this thread
  http://www.ultimatepp.org/forum/index.php?t=msg&goto=134
34&&srch=serial+class#msg_13434

Being totally new to C++ and UPP coding, I'd like some help to make the attached project work.
The least I need to do is to poll the serial port during the lifetime of the program so that I can
display those characters on the docedit box. I may possibly need to do a timedcallback to check
for characters or better still event driven receiver.

I'd appreciate any pointers or guidance you can provide.

Thank You
Jerson

```
File Attachments
```
1) CommPak.zip, downloaded 706 times

Subject: Re: Struggle with Serial port class
Posted by kohait00 on Thu, 05 Aug 2010 07:00:53 GMT

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this topic is a field on its own nontrivial. it is hard to set up for single thread to be callback like.
you either use another worker thread who takes care of reading and writing who can PostCallback
or invoke the Callback directly (wouldnt be a good if performance critical...needs to handover to
MainThread, and wait for it anyway).

i have coded a overlapped driven communication class that can do that, but it needs some
refactoring, maybe it will help someone later..

Subject: Re: Struggle with Serial port class
Posted by mrjt on Thu, 05 Aug 2010 08:00:07 GMT

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I would guess you need a worker Thread that collects data from a serial port and writes it to a
buffer (using a Mutex to be thread safe of course). The main thread can then update the display
from the buffer using a timer.

I've never used the class myself so that's the best advice I can give.

For threading see the GuiMT threading example/reference and remember to set your project to compile with MT flags.

Subject: Re: Struggle with Serial port class
Posted by kohait00 on Thu, 05 Aug 2010 08:17:17 GMT
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EDIT: sorry, wrong thread posted...

Subject: Re: Struggle with Serial port class
Posted by jerson on Thu, 05 Aug 2010 09:22:53 GMT
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I have made some changes based on my ideas and I can see that I am able to gather characters in the Rx Buffer. Can anyone help me to append the data that I get from the class to the DocEdit box?

The relevant file is the main.cpp The section I need help with is in CommPak::CheckRxTmr()

I am not sure if the timer gets destroyed when I close the topwindow. I tried to do a WhenClose, but I think I need to do more than what I am doing right now since it crashes if I use that callback. Without the callback it seems to work fine.

File Attachments
1) CommPak.zip, downloaded 420 times

Subject: Re: Struggle with Serial port class
Posted by mrjt on Thu, 05 Aug 2010 09:42:26 GMT
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Single-threaded:

```
void CommPak::CheckRxTmr()
{
 char buff[65]; // Last byte reserved for 0 terminator

 while (CommPort.ReadDataWaiting() > 16) {
  int bytes_read = CommPort.ReadData(buff, 64);
  buff[bytes_read] = 0;
  esText.Insert(esText.GetLength(), buff);
 }
}
```

Simplest multi-threaded implementation (a more complex version with a locked buffer would be better):

```
void ReadSerialData(int packet_size, DocEdit *edit) {
 char buff[65]; // Last byte reserved for 0 terminator

 for (;;) {
  while (CommPort.ReadDataWaiting() > 16) {
   int bytes_read = CommPort.ReadData(buff, 64);
   buff[bytes_read] = 0;
   {
    GUILock _; // This locks the GUI thread (until end of scope)
        // so that we can safely update the Ctrl
    edit->Insert(edit->GetLength(), buff);
   }
  }
 }
}
```

To run the thread:

```
CoWork().Do(THISBACK2(ReadSerialData(16, &esText));
```

Subject: Re: Struggle with Serial port class
Posted by jerson on Thu, 05 Aug 2010 09:49:23 GMT
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mrjt

Perfect. Thank you very much. It works as expected. Could you please clarify my second question about the timer? Do I need to KillTimeCallback or will it be killed automatically?

Jerson

Subject: Re: Struggle with Serial port class
Posted by mrjt on Thu, 05 Aug 2010 10:04:36 GMT
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The timer will automatically be desroyed when the TopWindow is deallocated. In this situation closing the window will be enough since it gets deallocated straight afterwards.

If you need to do something on window closing you are better off overriding TopWindow::Close (just remember to call TopWindow::Close in your function). WhenClose is just the Callback that gets trggered when the window cross is clicked.

Subject: Re: Struggle with Serial port class
Posted by jerson on Fri, 06 Aug 2010 03:52:32 GMT
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Does anyone know why the Serial::Close() followed by Serial::Open command not work? It seems to hang the code and I have to kill the process to regain control. Is this a Windows quirk?

The problem occurs when I try to change com ports wherein I first close the existing open com port, set new parameters and Open the new com port. If I do not do this, the program always works reliably.

this is the relevant code that is causing me grief

```
void CommPak::SetupComms()
{
int Cnt;
int Port,Baud;

 WithCommSetup<TopWindow> CommSetup;

 // stop the timer before changing anything
 if (ExistsTimeCallback(idRxTimer))
 {
  KillTimeCallback(idRxTimer);
  PromptOK("Killed the timer");
 }

 // if the port is open, close it
 if (CommPort.IsOpened()) CommPort.Close();

 CtrlLayoutOKCancel(CommSetup, "Setup Comms");
 for (Cnt=1;Cnt < 9;Cnt++)
  CommSetup.dlPort.Add(Format("COM%d",Cnt));
 CommSetup.dlBaud.Add("1200");
 CommSetup.dlBaud.Add("2400");
 CommSetup.dlBaud.Add("4800");
 CommSetup.dlBaud.Add("9600");
 CommSetup.dlBaud.Add("19200");

 CommSetup.dlPort = "COM6"; // choose to display COM6
 CommSetup.dlBaud= "9600"; // and 9600 baud

 if (CommSetup.Execute() == IDOK)
 {
  Port = CommSetup.dlPort.GetIndex()+1;
  Baud = CommSetup.dlBaud.GetIndex();
  DUMP(Port);
  DUMP(Baud);

  // Now open the port at the baud rate
```

```
  if (!CommPort.Open(Port,Baud))
    PromptOK(Format("Cannot open COM%d",Port));
  else
  {
    PromptOK(Format("COM%d opened successfully",Port));
    SetTimeCallback(-100,THISBACK(CheckRxTmr), idRxTimer);
  }
 }
}
```

Thanks

Subject: Re: Struggle with Serial port class
Posted by mrjt on Fri, 06 Aug 2010 09:22:12 GMT
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It seems to be Windows problem, maybe driver related, with the call to CloseHandle.

It's not a complete freeze btw, the program resumes execution after ~10 seconds.

Subject: Re: Struggle with Serial port class
Posted by jerson on Fri, 06 Aug 2010 09:31:27 GMT
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Thanks mrjt for checking it out for me. I really appreciate your help.

Subject: SUCCESS : Struggle with Serial port class
Posted by jerson on Fri, 06 Aug 2010 17:29:20 GMT
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I think I found the problem.

I've been able to work with this successfully and contribute it here as a THANK YOU to all those who helped a newbie walk an extra mile.

This package is a very simple replacement for Windows Hyperterm when used with my hardware devices. All it does is to send a couple of commands on the serial port which is selected and listen for the response. The response goes to the text box which can be saved to a file.

thanks

File Attachments

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by jibe on Fri, 15 Mar 2013 13:44:52 GMT
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Hi,

Please, see this message. Thks.

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by sergeynikitin on Sat, 16 Mar 2013 14:53:49 GMT
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If anybody find linux working example...
I developed Linux analog CommPack and used in my projects.
(but it normal work only under root user)
So if needed, I'll prepare to upload my variant of CommPack.

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by deep on Sat, 16 Mar 2013 15:39:57 GMT
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Hi,

Quote:
If anybody find linux working example...
I developed Linux analog CommPack and used in my projects.
(but it normal work only under root user)
So if needed, I'll prepare to upload my variant of CommPack.

yes, will be appreciated.

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by sergeynikitin on Sun, 17 Mar 2013 07:44:06 GMT
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CommPackPuloon (Puloon-2000 - some pay equipment)
This program to diagnostic this device.

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by deep on Sun, 17 Mar 2013 16:14:04 GMT
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Hi Sergey,

Thank you.

Subject: Re: [SUCCESS] Struggle with Serial port class
Posted by Didier on Tue, 19 Mar 2013 08:56:01 GMT
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sergeynikitin wrote on Sat, 16 March 2013 15:53If anybody find linux working example...
I developed Linux analog CommPack and used in my projects.
(but it normal work only under root user)
So if needed, I'll prepare to upload my variant of CommPack.
You can make it work for any user if you add the group 'dialout' to the user that needs access to
the serial port