Subject: New GDB frontend for Theide
Posted by mdelfede on Thu, 02 Feb 2012 18:26:58 GMT
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Hi,

finally the new GDB frontend inside ide became usable... still many features to add, but it can already do a bit more (and also a bit less) than previous one.

To test it, just compile theide from sources or fetch a nighty build (it should become available in a few days from today 2/2/2012); in settings menu you can choose from standard GDB frontend or the new Gdb_MI2 one.

Added features :
- variables explorer (similar to windows PDB one)
- decoding of Upp classes, work in progress, by now just string and vectors, but easy to extend with python

Missing features :
- Quick watch (really never found use of it, but....
- Still some quirks with disasm pane
- CPU registry not set

To do :
- Threading support
- Watchpoints

Please, feedback !

Ciao

Max

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Sat, 04 Feb 2012 12:58:52 GMT
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The GDB_MI2 frontend is almost complete now.
Features :

- Deep QuickWatching : the quickwatch dialog evaluates variable childs at once

- Threading support

- Decoding of Upp containers and types; by now it decodes String, Vector, Array, Index, VectorMap and ArrayMap, One and Value for standard and rich types

- Variable explorer, as in Windows debugger

- Tooltips in editow showing variables values when debugging

- Support for 64 bit CPU registers in 64 bit mode

- Fast !

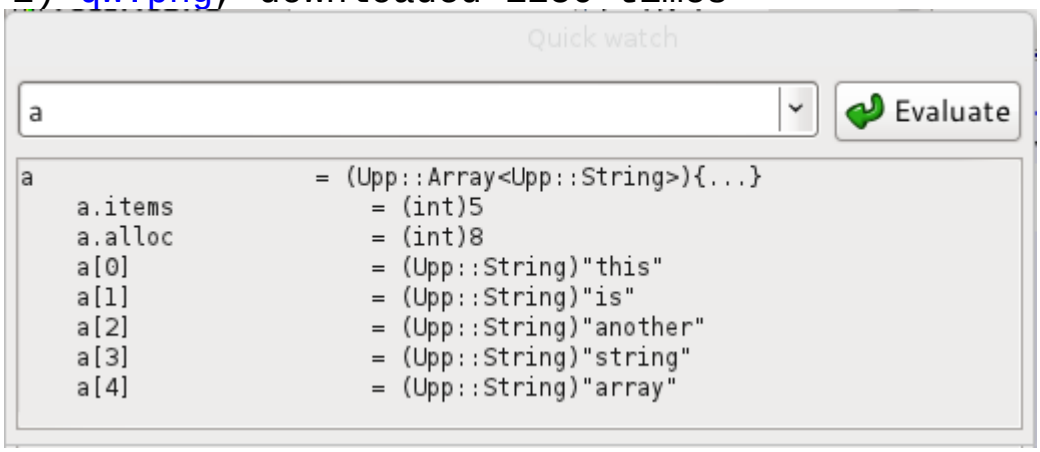
To select the new frontend, go to Ide settings menu and selecg the Gdb_MI2 one.

Ciao

Max

File Attachments

1) qw.png, downloaded 1250 times



Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:31:55 GMT
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Looks good.

Somehow I am not successful with assembly level debugging. It does not show pointer to current opcode and it does not allow stepping in assembly (normal source code step is performed).

AMD64 has more registers than those displayed. Plus, showing FPU registers would be nice too. I therefore believe that we rather need a new pane for registers....

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Mon, 06 Feb 2012 16:37:37 GMT
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mirek wrote on Mon, 06 February 2012 17:31Looks good.

Somehow I am not successful with assembly level debugging. It does not show pointer to current opcode and it does not allow stepping in assembly (normal source code step is performed).

Ops... I forgot that one
I'll fix it on next couple of days.

Quote:
AMD64 has more registers than those displayed. Plus, showing FPU registers would be nice too. I therefore believe that we rather need a new pane for registers....

Eh.... AMD64 has tons of registers, but we'd need a complete pane for it. I was thinking on it, but then you'll loose the quick-look at principal registers that is available now, if you use another tabbed control to alternate between assembly and registers.
If you have a nice idea about the layout I can implement it.

Another nice feature I'd like to add are a sort of Tracepoints; breakpoints that, instead of stopping target, evaluate and log an expression when passing on them.
Hardware breakpoints could also be possible.

BTW, for both o latter points, it would be nice to have different breakpoint symbols on theide and a right-click menu on them, to configure them on the fly.

Max

Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:40:23 GMT
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[quote title=mdelfede wrote on Mon, 06 February 2012 11:37]mirek wrote on Mon, 06 February 2012 17:31
Eh.... AMD64 has tons of registers, but we'd need a complete pane for it. I was thinking on it, but then you'll loose the quick-look at principal registers that is available now, if you use another tabbed control to alternate between assembly and registers.
If you have a nice idea about the layout I can implement it.

Max

No, I meant put it where "Local", "Auto" etc are... Just add "CPU".

(I plan to do this for pdb when I will finally get there).

Mirek

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Mon, 06 Feb 2012 16:41:46 GMT
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ah, ok... that can be easy done.

Which registers do you want to be displayed ? All is too much, I guess.....

Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:42:08 GMT
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Another one: Displaying type of expression is fine, but it would be good to add a special column for this. Plus, I think EvenOdd would look better for that ArrayCtrl (will be more important then too).

Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:44:36 GMT
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mdelfede wrote on Mon, 06 February 2012 11:41ah, ok... that can be easy done.

Which registers do you want to be displayed ? All is too much, I guess.....

16 integer, 16 FPU/YMM, FS, GS would IMO cover all important.

I guess you will need to figure out some smarter design than simple ArrayCtrl for this.

I even think that for integer registers, there could still be space to display even integer values and characters (unicode).

Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:45:41 GMT
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mirek wrote on Mon, 06 February 2012 11:44mdelfede wrote on Mon, 06 February 2012 11:41ah, ok... that can be easy done.

Which registers do you want to be displayed ? All is too much, I guess.....

16 integer, 16 FPU/YMM, FS, GS would IMO cover all important.

Correction: forget about YMM, that is too much. Just FPU values.

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Mon, 06 Feb 2012 16:48:32 GMT
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mirek wrote on Mon, 06 February 2012 17:42Another one: Displaying type of expression is fine, but it would be good to add a special column for this. Plus, I think EvenOdd would look better for that ArrayCtrl (will be more important then too).

What is EvenOdd ????

Subject: Re: New GDB frontend for Theide
Posted by mirek on Mon, 06 Feb 2012 16:51:23 GMT
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EvenOdd colorizes Even rows - see e.g. Output mode in theide.

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Sat, 28 Apr 2012 20:04:44 GMT
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I added an "Asynchronous break" command, which allows breaking target application on demand without need of a previously breakpoint set.
For example, if you have this endless loop:

```
int i = 0;
while(true)
{
   Cerr() << i;
   i++;
}
```

you can use "Asynchronous break" to stop in the middle of it; it'll usually stop inside assembly code, but then with a "step" command you'll land on first available source line.
This work even if you don't know where's your app hanging.

By now, the command will stop ALL your app's threads at once.

Ciao

Max

Subject: Re: New GDB frontend for Theide
Posted by koldo on Sun, 29 Apr 2012 11:40:39 GMT
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Hello Massimo

Thank you for your efforts in GDB .

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Sun, 29 Apr 2012 16:42:10 GMT
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Slowly progressing
I'm adding stuffs as I need them, as usual

Max

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Sun, 29 Apr 2012 22:04:26 GMT
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Added pretty printers for :

Point (and Pointf)
Size (and Sizef)
Rect (and Rectf)

BTW, my python skills are quite limited, if anybody want do jump in and clean my python code is very wellcome....

Max

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Fri, 18 May 2012 15:10:00 GMT
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Some enhancements :

- Values now are inspectable.... well, they will be when a patch will be embedded in core. No more crash when trying to inspect an uninitialized Value.

- When stopping inside a callback, now X11 grab is correctly released, allowing normal mouse and keyboard usage

- Ctrl-Q now opens QuickWatch pane getting the variable from cursor, either in code editor on in one of watch panes below.

- Some others that I forgot

Ciao

Max

Subject: Re: New GDB frontend for Theide
Posted by mdelfede on Sun, 20 May 2012 17:08:10 GMT
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Value inspectors completed, with Core support.
Now all Values convertible to String are correctly displayer in debugger.

Max