

DSDP - Device Debug Subproject Meeting

12 October – 13 October 2005

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(updated 10/17/05)

Meeting Details

Device Debugging Project: Wednesday October 12th (noon) to Thursday October 13th (noon)

Target Management Project: Thursday October 13th (noon) to Friday October 14th (3 pm) – Notes posted separately

Location: Wind River Downers Grove

Agenda

Wednesday

- Doug Gaff – Introductions and Agenda
- John Leier – Digi
 - Introduction to Digi, Eclipse products, needs from DD/TM
- Matt Scarpino – Star Bridge Systems
 - Introduction to Star Bridge, Eclipse products, needs from DD/TM
- Peter Lachner – Intel
 - Introduction and needs from DD/TM
- Darin Wright – IBM
 - Flexible hierarchy in all debug views
 - Asynchronous APIs
 - Pluggable update policies
 - Flexible view wiring
- IBM (some of this may be covered by Darin's talk)
 - Alternate view rendering and more fine-grained control of existing rendering.
 - Editor/debugger extension point design - deferred
 - Memory view usability issues
 - Breakpoint working set use cases / launch persistence - deferred
- TI
 - Initial proposal for Open Debug Server interfaces - deferred
- QNX (also an action item for Nokia, but they are unable to attend)
 - Provide an update: Debug console requirements and initial design - deferred
- Next steps: CVS organization, prototyping, beta release planning, contributors, phone meetings, mailing lists

Thursdays

- Samantha Chan – IBM
 - Update policy design and implementation

- Doug Gaff & Mark Bozeman
 - Using views with multiple debug contexts
- Mark Bozeman (ATI) and Doug Gaff (Wind River)
 - Multicontext & pin and clone
- EclipseCon – embedded track
- Next steps: CVS organization, prototyping, beta release planning, contributors, phone meetings, mailing lists
- Doug Gaff
 - IP review and check-in policies

Attendees - Device Debugging

ATI/Mentor

Mark Bozeman
George Clark

AMI Semiconductor

Ken Dyck (phone)
Mark Melvin (phone)

Digi

John Leier

FreeScale

Daymon Rogers
John Cortell

IBM

Darin Wright
Alan Boxall
Samantha Chan (phone)

Intel

Peter Lachner

Nokia

Ken and Warren could not attend

Palm Source

Ewa Matejska

QNX

Mikhail Khodjaiants
Doug Schaefer (phone)

Star Bridge Systems

Mathew Scarpino
TI
Paul Gingrich

Wind River
Doug Gaff
Felix Burton
Randy Rohrbach

Attendees - Target Management

Same list as Device Debugging, except Randy, Darin, and Mikhail left on Thursday.

IBM
David Dykstal

Notes

(Wednesday)

John L, Digi

- Digi bought Net Silicon and Rabbit Semiconductor
- They are trying to decide if Eclipse is the next step for them.
- Use ThreadX and Embedded Linux
- Not sure about the participation level yet.

Matt S, Star BridgeSystems

- Maker of FPGA's
- They are a hardware company moving into software.
- Originally, they built something with Borland C++, but they are using Eclipse now.
- IEEE 1532 extension to JTAG for FPGA work.
- BSDL parser.
- Hoping to contribute some open source code.
- No commercial products on Eclipse yet.

Peter L, Intel

- Intel Software Products Division
- Intel XDB debugger – not based on Eclipse
- Looking into potentially building a product on Eclipse

Darin W, IBM

- See presentation – “Towards A Flexible Debug Platform”
 - Flexible hierarchy in all debug views
 - Asynchronous APIs
 - Pluggable update policies
 - Flexible view wiring

- A couple of issues not addressed yet by Darin's proposal
 - It doesn't deal with the concept of two copies of a view listening to different contexts in one debug view.
 - IPresentationContext is currently coupled with a Workbench Part, but some folks don't want to be tied to the Workbench Part
 - Incremental update on children in a view
- Scheduling
 - API code freeze for 3.2 is M4 (Dec 16), so ideally feedback is needed on these new interfaces. However, consensus in the room is that we need more time to try to move to these new API's and provide feedback. One option is to keep the new stuff internal. Another is to call the API's experimental to allow them to change after the code freeze. The API's will remain experimental for the 3.2 release.
- Comments on CDT vs. Platform
 - FreeScale, TI, PalmSource, QNX – use CDT currently or are thinking of using CDT. Folks wanted to know about the timeframe for CDT's adoption of these new changes. TI and PalmSource are especially interested since they are at a design juncture: new Platform Debug or CDI?
 - ATI, IBM Distributed Development, WR – use Platform Debug views
 - It will be easier for folks not using CDT to start prototyping against the new interfaces.
- Action Items
 - Darin to follow up with the Platform PMC on either making these changes an "experimental API" or keeping them internal for the Eclipse 2006 Release Train.
 - CDT team to respond to this proposal and provide a roadmap for when CDT will move to this. Doug S felt that it was important for the CDT debugger to move to this new design, though.
 - Everyone should use M3 and make sure the backward compatibility works. Then think about when you can try the new interfaces in order to provide feedback at our next face to face meeting.
 - FreeScale and PalmSource to provide some use cases for CDT to adapt to Darin's proposed changes. How much needs to be adaptable beyond the current CDT debug model?

Memory View Planned Items for Eclipse 3.2– Samantha C – IBM

Improve Usability

Item

Fix F1 Help in Memory View, need to devise strategy for contributing F1 Help. (i.e. should a rendering contribute F1 help or should it be a generic F1 help in the Memory View.

Bug

https://bugs.eclipse.org/bugs/show_bug.cgi?id=102943

Make adding memory blocks easier
Enhancement to Memory Monitors View pane
- provide shortcuts, etc.

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106419

Allow user to adjust number of columns in a table rendering - address scalability issue
Highlight / colorize changes in memory view

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106422

https://bugs.eclipse.org/bugs/show_bug.cgi?id=90031

https://bugs.eclipse.org/bugs/show_bug.cgi?id=90164

Provide hover support in table renderings

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106567

Performance

Item

Get memory content from background thread and avoid blocking UI

Bug

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106424

Adding 0 memory blocks - still go through event loop when no memory block is added

https://bugs.eclipse.org/bugs/show_bug.cgi?id=100478
(still deferred)

Support for Device Development / Improvement to Framework

Item

Rename Memory Monitors to something more intuitive

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106420

Initial column size preference should be saved based on target

https://bugs.eclipse.org/bugs/show_bug.cgi?id=99866

Make it easier to persist memory blocks and renderings

https://bugs.eclipse.org/bugs/show_bug.cgi?id=106421

Provide UI and API to configure the addressable size - allow user to enter addressable size memory block is created

https://bugs.eclipse.org/bugs/show_bug.cgi?id=87374

https://bugs.eclipse.org/bugs/show_bug.cgi?id=88914

(deferred, still thinking)

Toggle Endianness of Memory Units
Support for address space in Memory View -

https://bugs.eclipse.org/bugs/show_bug.cgi?id=100079
(deferred need clarification)

go to address needs to take expression
Need to make some more Memory View related constants/methods public

https://bugs.eclipse.org/bugs/show_bug.cgi?id=100081

Memory View goes blank when clients has provided adapter to IMemoryBlockRetrieval - provide default adapter to avoid this from happening

https://bugs.eclipse.org/bugs/show_bug.cgi?id=97706

https://bugs.eclipse.org/bugs/show_bug.cgi?id=99985

Paul G, TI

- Gave the open debug server presentation again and we polled folks for interest.
- TI feels that the debug engine is already a commodity and we should be building a better solution as a community. They also feel that multiple tools vendors working on the solution would provide better silicon support.
- FreeScale and ATI felt this was an overlap with their IP and their competitive advantage.
- QNX (Mikhail) thought this would be good and should be part of CDT.
- The general feeling of the group is that this is the likely direction that debug engine technology will go, but folks are having trouble signing up for this now.
- Conclusion was that TI should think more about the interfaces and write up some specifications which the group can review early next year and discuss further.

(Thursday)

Update Policy - Samantha C - IBM

- See presentation: "Eclipse Debug Views Update Policy"
- Some overlap with Darin's proposal
- Darin prefers that policy handlers not be exposed to user
- Extension points vs. adaptable interfaces
- Alan like the view to be able to specify it's update mode
- Felix likes the model to be able to control the policy
- Should we separate the "what" to update from the "when" in the update policy?
- **AI: Darin and Samantha to work on combining features, especially user settings**

Views with multiple debug contexts – Doug G and Mark B

- See Doug G presentation – "Multiple Debug Context Coloring"
- See Mark B presentation – "Eclipse Pinned Debug Views"
- Demos given by both presenters. Agreement was that some combination of the two concepts should be proposed.
- **AI: ATI and Wind River to come up with use cases for multiple contexts and a proposal for user experience**

Eclipse IP Due Diligence – Doug G – Wind River

- See presentation

EclipseCon 2006 – Call for talks, tutorials, BOF's

- Martin O will present a Target Management talk.
- Group to consider other device software topics.
- **AI: Doug to forward embedded marketing workgroup email.**

Miscellaneous

- We will use mailing lists for discussions now and leave the newsgroup for announcements and new interested parties.
- **AI: Everyone to subscribe to dsdp-dd-dev mailing list.**

Debugger Backend presentation

- See Target Manager meeting notes

Next Meetings

- Dec 20 – phone meeting
 - The purpose of this meeting will be to review Darin's API changes and to get some education on their use.
- Feb 21-23 – Face-to-face in Toronto
 - This meeting will again be a combination of DD and TM projects.
 - DD goals
 - Provide detailed feedback to Darin on porting efforts to new API.
 - Discuss EclipseCon tutorials in this area.
 - Discuss other collaboration areas – perhaps in some embedded-specific debug / utility views.
 - Review CDT plans for new interfaces.
 - Action Item follow up and new topics.