



GPU Debugging

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4 June 2021

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Agenda

- Debug Adapter Protocol
- Theia GPU extension
- Demonstration
- What next



Debug Adapter Protocol Architecture

Debug Adapter protocol



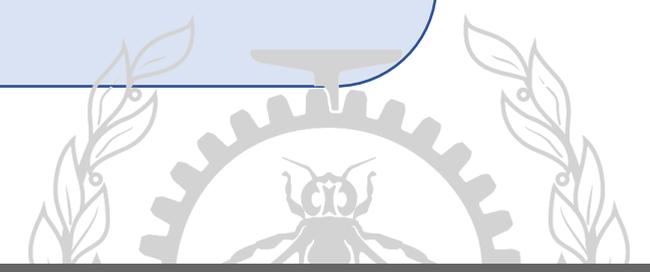
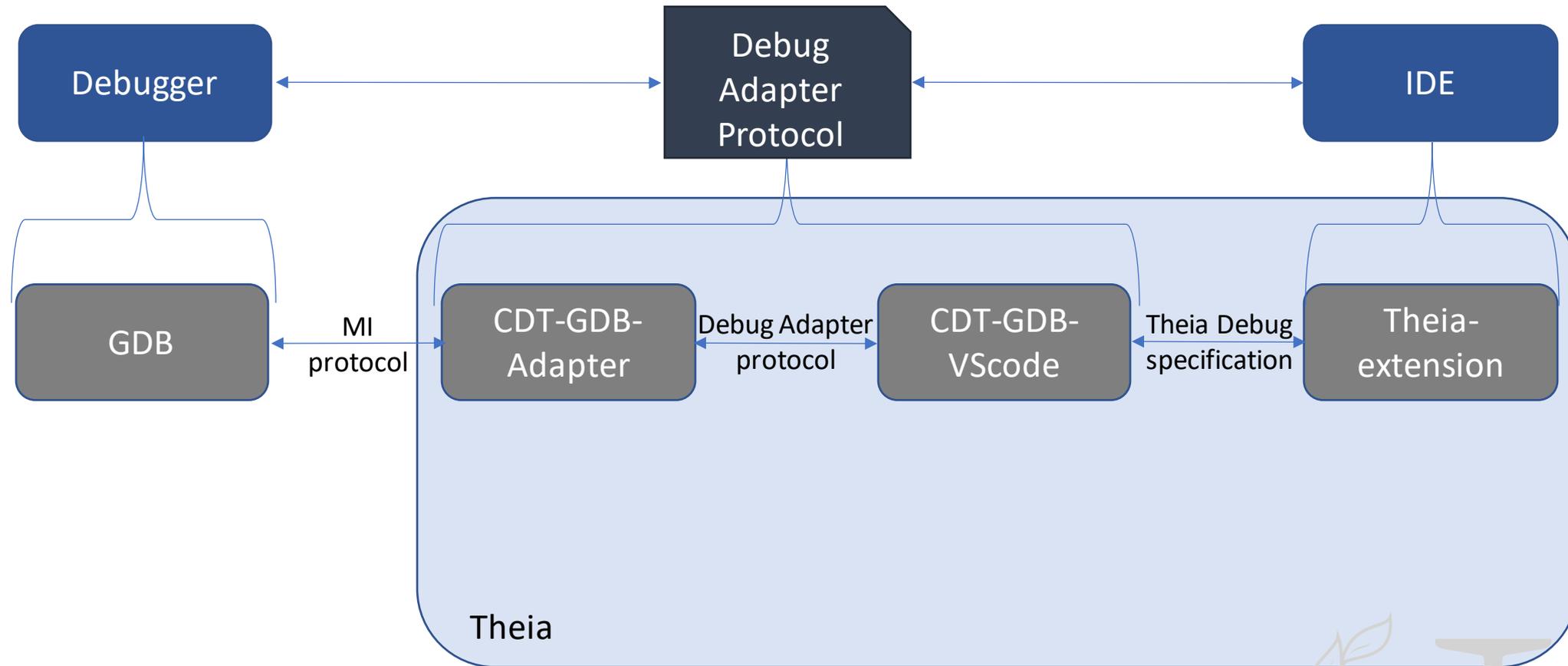
Exemple : The Next step command

```
Content-Length: 119\r\n\r\n{\n  "seq": 153,\n  "type": "request",\n  "command": "next",\n  "arguments": {\n    "threadId": 3\n  }\n}
```

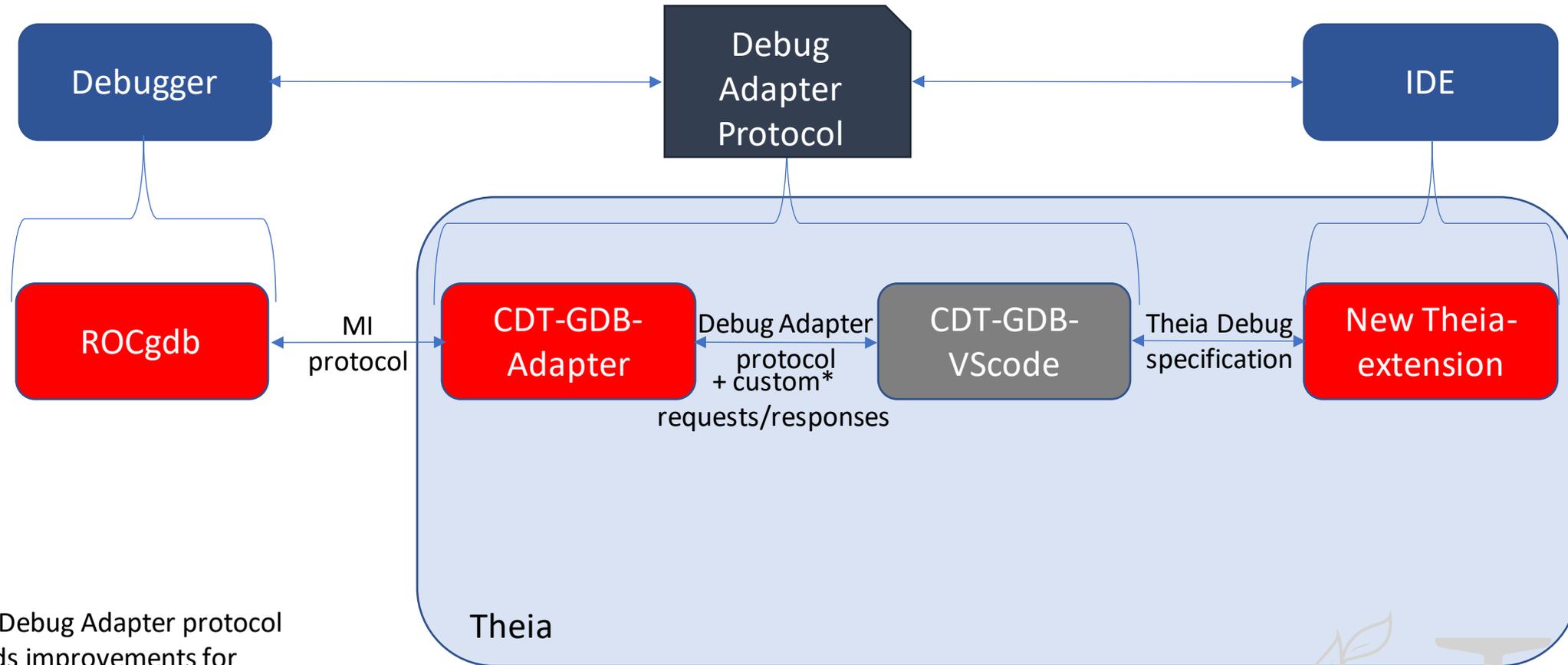
<https://microsoft.github.io/debug-adapter-protocol/overview>



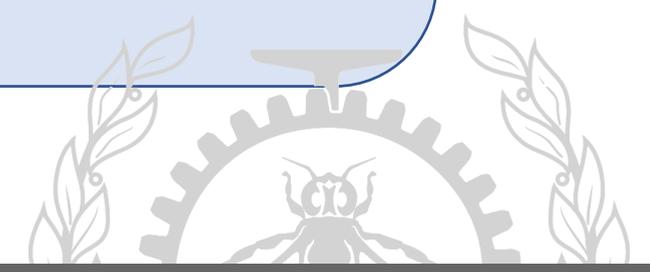
Debug Adapter Protocol Architecture



Debug Adapter Protocol Architecture



* The Debug Adapter protocol needs improvements for debugging GPUs



Theia GPU Debug Extension

Objectives :

- Create a new Theia debug extension for GPU debugging
- Using ROCgdb at first.



Theai Debug GPU extension

- Based on the theia-cpp-extensions at first.
- Give the user all the information that ROCgdb can provide
- Should be compatible with future AMD updates of ROCgdb (Symbolic variable update)



Demonstration



What Next

- Test our tools on a number of representative external applications, to obtain feedback and improve the tools
- Improve the Theia extension.



The End

Thank you for attention.

Any question ?

