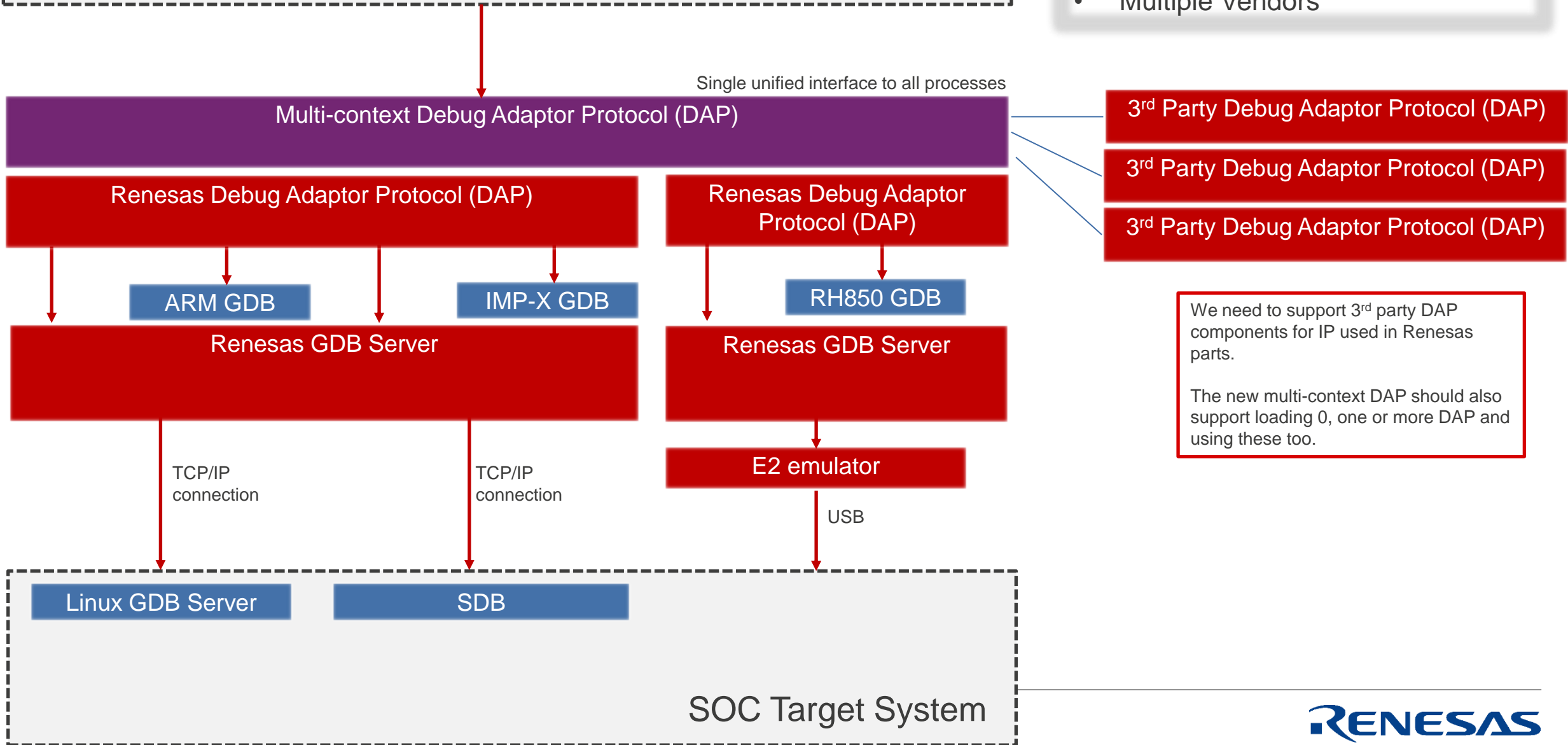


Visual Studio Code

“Full” Renesas Use Case

- Heterogenous
- Multiple Vendors



Visual Studio Code

“Simplified” Use Case

- No hardware needed
- Useful to explore problem space

Single unified interface to all processes

CDT Amalgamator (DAP)

CDT GDB Adapter (DAP)

CDT GDB Adapter (DAP)

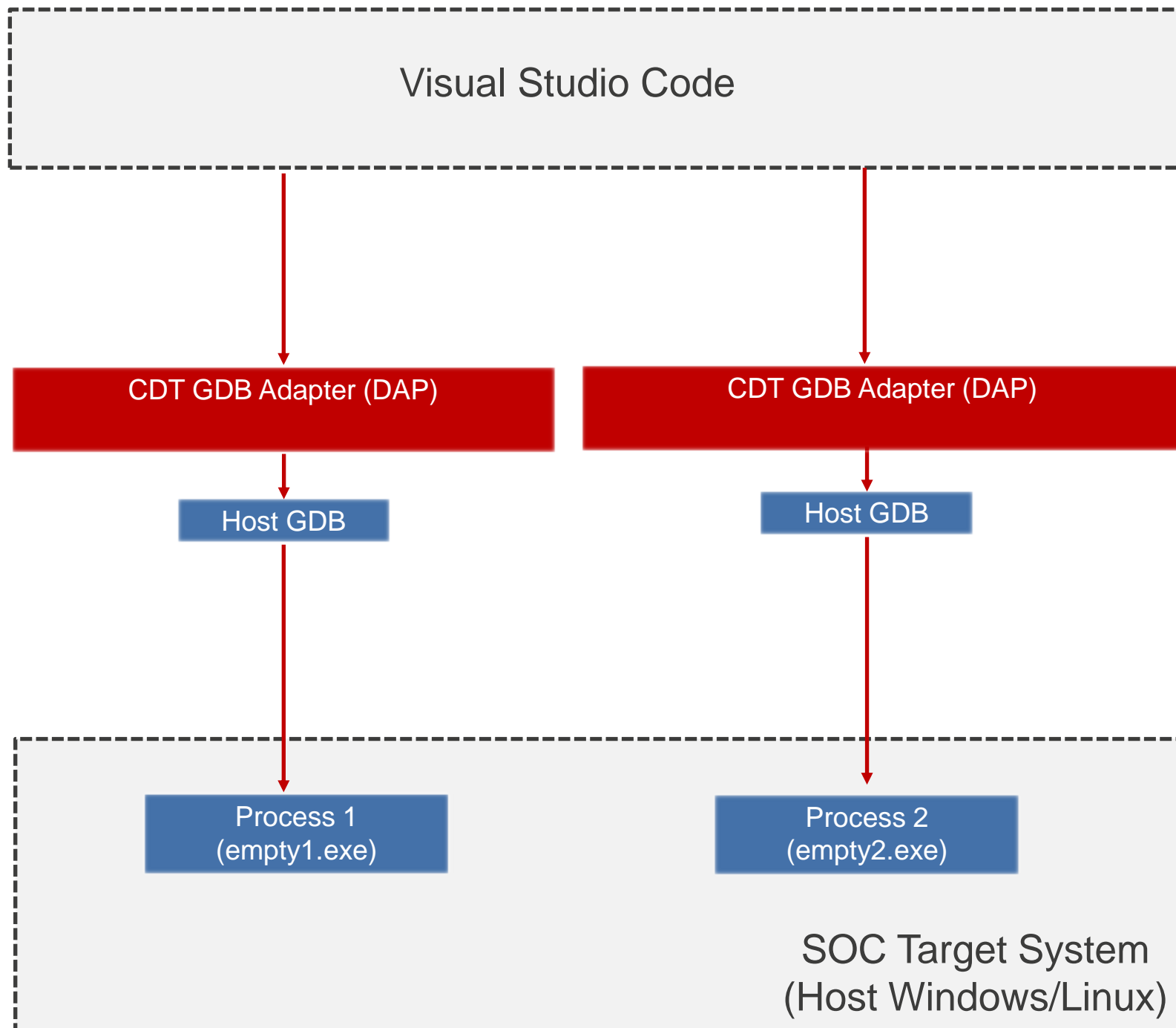
Host GDB

Host GDB

Process 1
(empty1.exe)

Process 2
(empty2.exe)

SOC Target System
(Host Windows/Linux)



Today's State

- Multiple independent debugs
- Each needs to be launch/stopped independently
- VS Code provides “compounds” to simplify launching

Single Process config using cdt-gdb-vscode

```
{
  "type": "gdb",
  "request": "launch",
  "name": "proc1",
  "program": "${workspaceFolder}/empty1.exe",
  "verbose": true
}

{
  "type": "gdb",
  "request": "launch",
  "name": "proc2",
  "program": "${workspaceFolder}/empty2.exe",
  "verbose": true
}

"compounds": [
  {
    "name": "proc1 + proc2",
    "configurations": [ "proc1", "proc2" ]
  }
]
```

Visual Studio Code

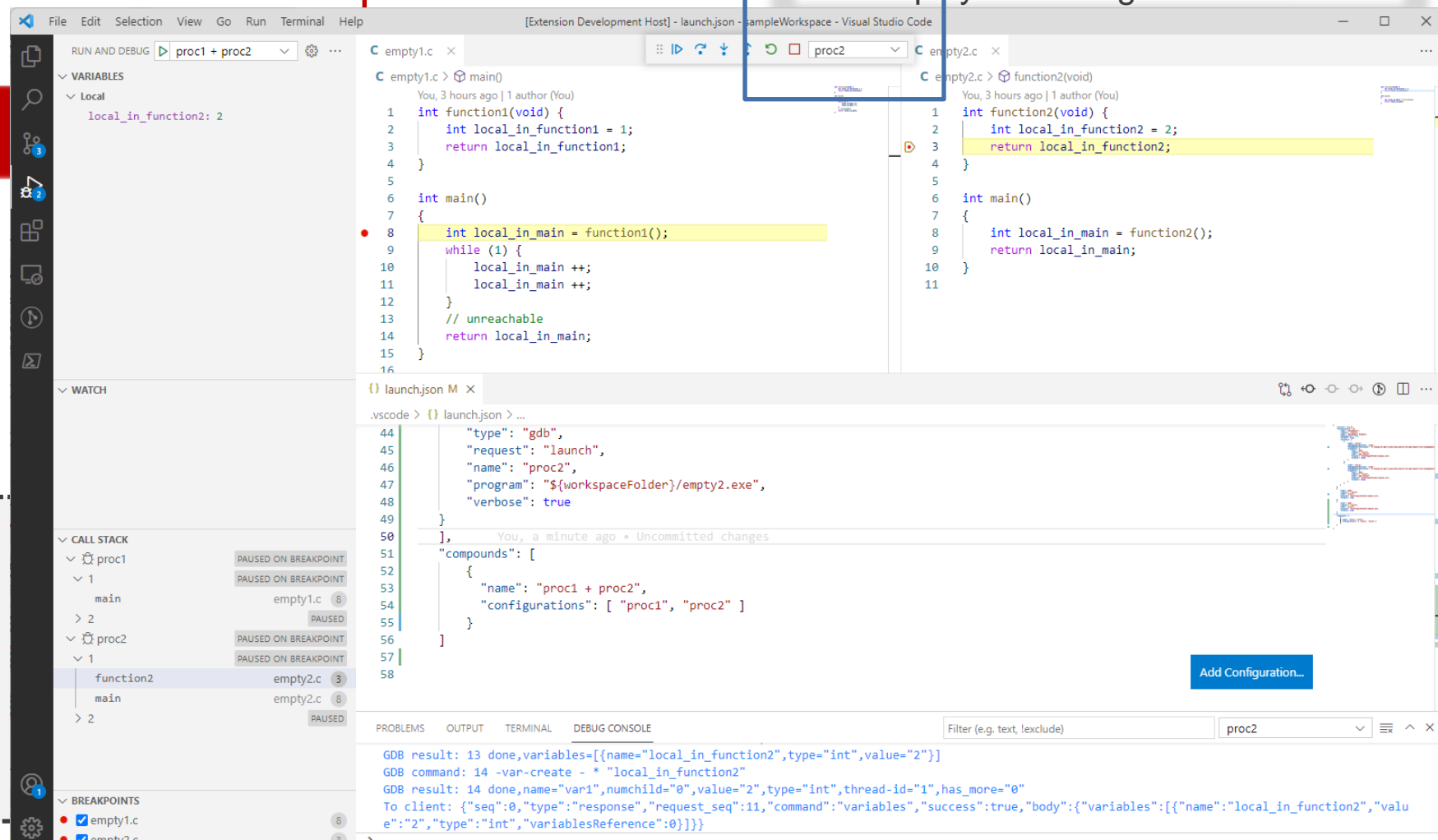
Today's State

- Multiple independent debugs
- Each needs to be launch/stopped independently
- VS Code provides “compounds” to simplify launching

CDT GDB Adapter (DAP)

Host GDB

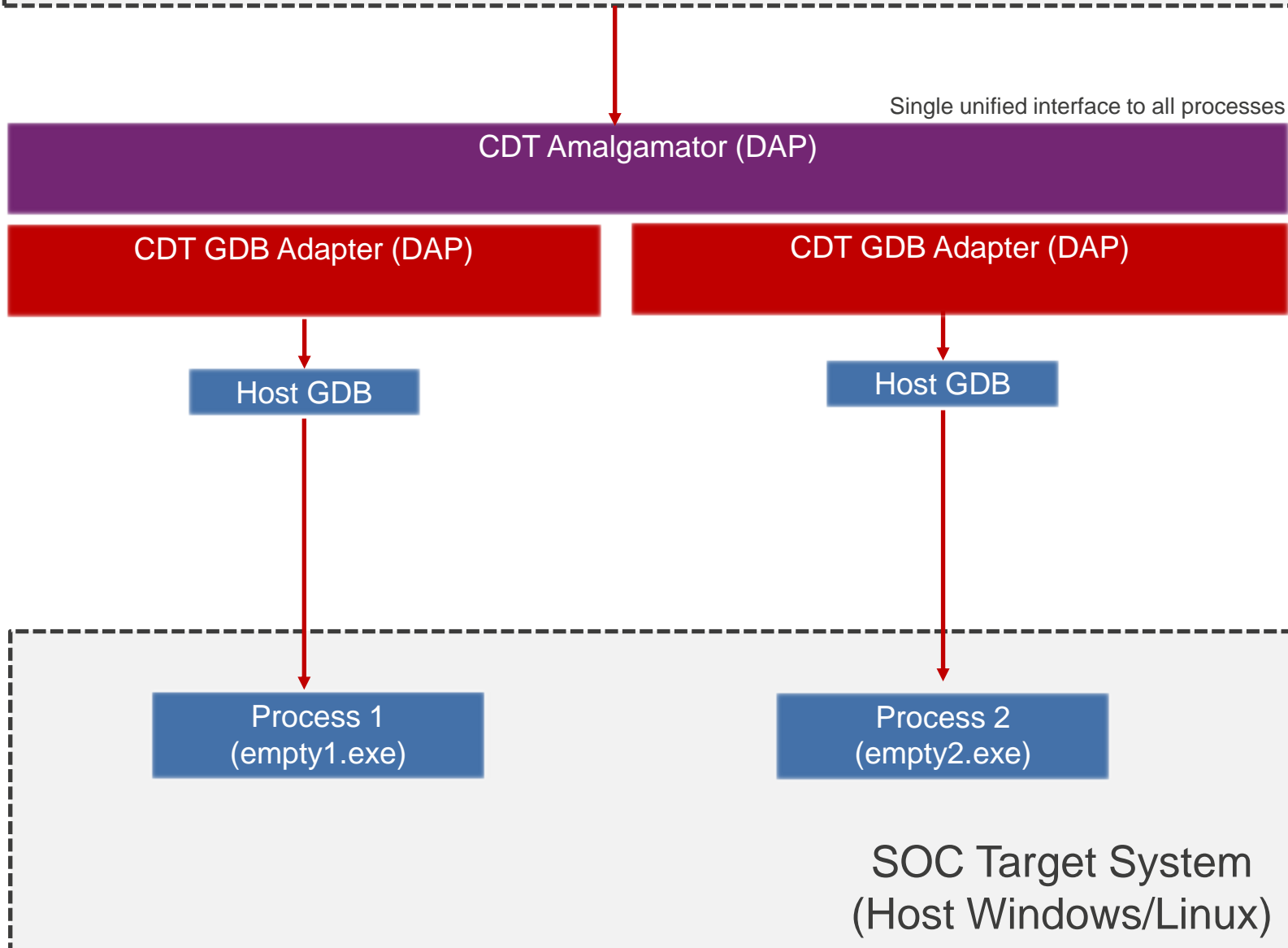
Process 1
(empty1.exe)



Visual Studio Code

“Simplified” Use Case

- No hardware needed
- Useful to explore problem space



CDT Amalgamator config

```
{
  "type": "amalgamator",
  "request": "launch",
  "name": "Amalgamator Example",
  "children": [
    {
      "name": "proc1",
      "debugAdapterRuntime": "node",
      "debugAdapterExecutable": "cdt-gdb-adapter.js",
      "arguments": {
        "program": "${workspaceFolder}/empty1.exe",
      }
    },
    {
      "name": "proc2",
      "debugAdapterRuntime": "node",
      "debugAdapterExecutable": "cdt-gdb-adapter.js",
      "arguments": {
        "program": "${workspaceFolder}/empty2.exe",
      }
    }
  ]
}
```

Visual Studio

CDT Amalg

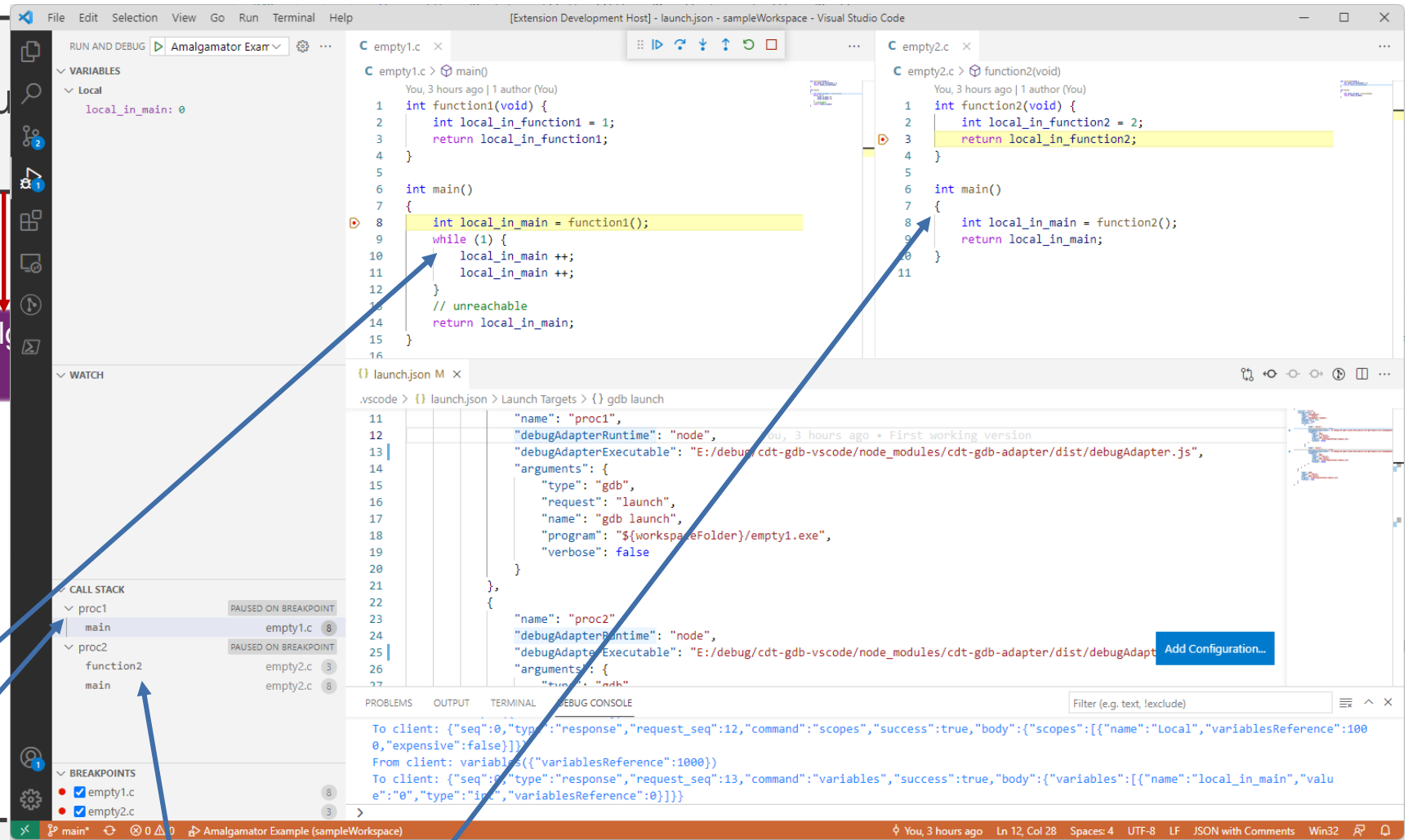
CDT GDB Adapter (DAP)

Host GDB

Process 1
(empty1.exe)

Process 2
(empty2.exe)

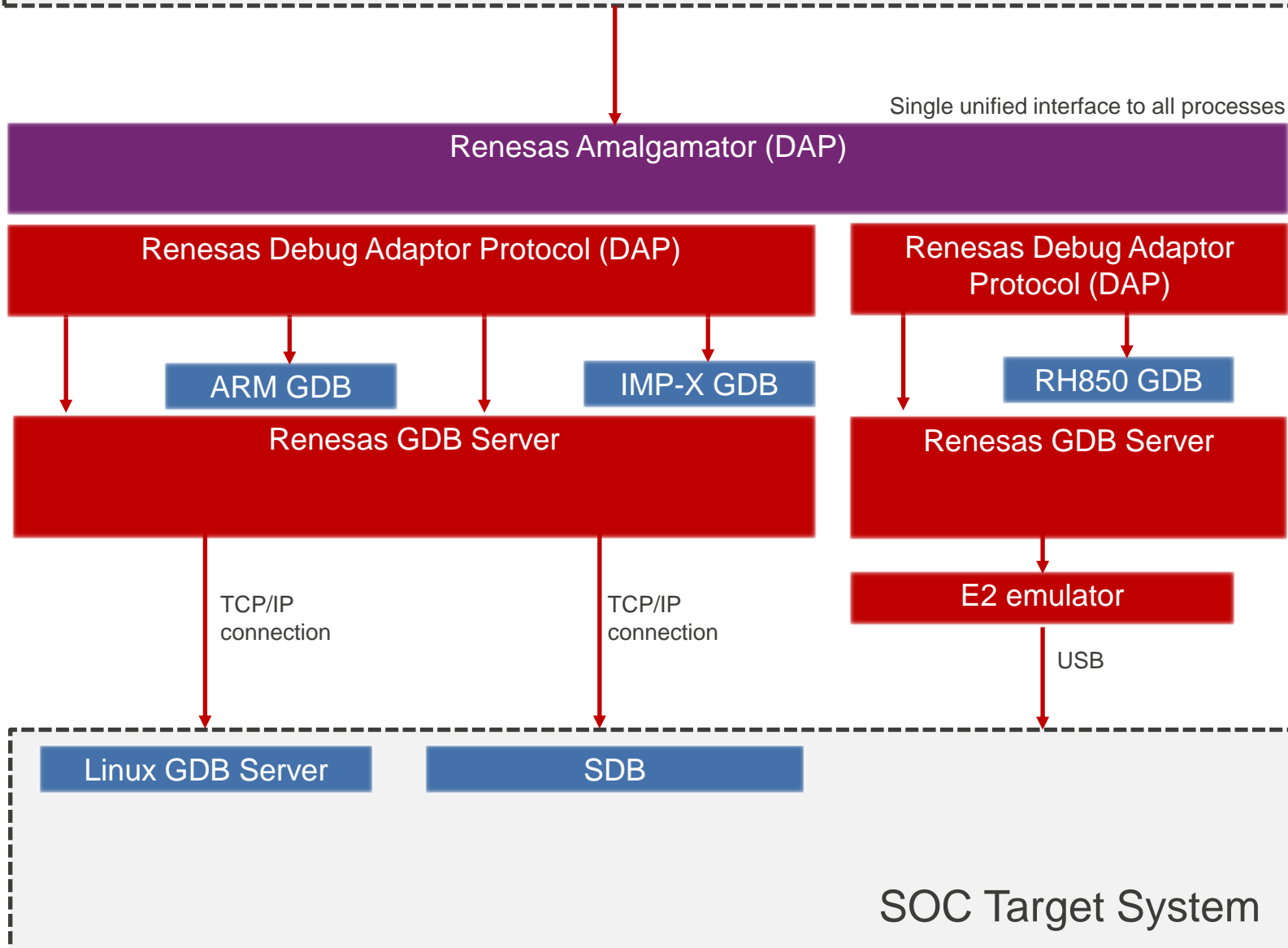
SOC Target System
(Host Windows/Linux)



Visual Studio Code

“Full” Renesas Use Case

- Heterogenous
- Multiple Vendors



Possible Renesas Amalgamator config

```
{
  "type": "renesas-amalgamator",
  "request": "launch",
  "name": "Renesas SOC Launch",
  "board": "SOC Target System",
  "children": [
    {
      "deviceid": "arm1+imp",
      "program": "${workspaceFolder}/main.elf",
      "imp": "${workspaceFolder}/imageproc.elf",
    },
    {
      "deviceid": "rh850",
      "program": "${workspaceFolder}/rh.elf",
    }
  ]
}
```

The Renesas Amalgamator knows which debug adapter + connection settings, gdb, gdbserver, etc to use based on combination of “board” and “deviceid” fields. Just like it does today in e2studio (Eclipse CDT).

Visual Studio Code

“Simplified” Use Case

- No hardware needed
- Useful to explore problem space

CDT Amalgamator (DAP)

Single unified interface to all processes

CDT Amalgamator config

```
{  
  "type": "amalgamator",  
  "request": "launch",  
  "name": "Amalgamator Example",  
  "program": "${workspaceFolder}/empty1.exe",  
}
```

CDT Amalgamator First Working Version:
<https://github.com/jonahgraham/cdt-amalgamator>

Process 1
(empty1.exe)

Process 2
(empty2.exe)

SOC Target System
(Host Windows/Linux)

```
},  
{  
  "name": "proc2",  
  "debugAdapterRuntime": "node",  
  "debugAdapterExecutable": "cdt-gdb-adapter.js",  
  "arguments": {  
    "program": "${workspaceFolder}/empty2.exe",  
  }  
}  
]  
}
```


Visual Studio Code

“Simplified” Use Case

- No hardware needed
- Useful to explore problem space



Host GDB

Process 1
(empty1.exe)

Demo Time!

SOC Target System
(Host Windows/Linux)

amalgamator config

```
"amalgamator",
  "type": "launch",
  "name": "Amalgamator Example",
  "program": [
    "proc1",
    "debugAdapterRuntime": "node",
    "debugAdapterExecutable": "cdt-gdb-adapter.js",
    "arguments": {
      "program": "${workspaceFolder}/empty1.exe",
    },
  ],
  "name": "proc2",
  "debugAdapterRuntime": "node",
  "debugAdapterExecutable": "cdt-gdb-adapter.js",
  "arguments": {
    "program": "${workspaceFolder}/empty2.exe",
  },
]
```