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How to use VSCode as Front-End for TRACE32

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To use Visual Studio Code (VSCode) as a frontend for TRACE32, you can utilize the [Debug Adapter Protocol \(DAP\)](#). Although TRACE32 does not natively support DAP, you can set up a proxy to translate between DAP and TRACE32's Remote API (RCL). This proxy enables VSCode to function as an effective Front-End for TRACE32, facilitating enhanced debugging capabilities.

Usage

1- You need TRACE32 version Nightly from 2024-07-16 (Build 170887 or later) or starting from the DVD R.2024.09

2- Start TRACE32 with API enabled:

- by adding this block to the config file:

```
RCL=NETTCP  
PORT=20000
```

- Or using the command line option (TRACE32 version Nightly from 2024-07-19 (Build 171009 or later)):

```
--t32-api-rcl=TCP 20000
```

Example: t32marm.exe --t32-api-rcl=TCP 20000 -c config.t32

- Or using the PRACTICE commands (TRACE32 version Nightly from 2024-07-19 (Build 170994 or later)):

```
SETUP.API.RCL /Interface TCP /Port 20000.
```

3- Open VSCode

4- Add a configuration in VSCode (Menu → Run → Add Configuration → select empty)

```
{  
    // Use IntelliSense to learn about possible attributes.  
    // Hover to view descriptions of existing attributes.  
    // For more information, visit: https://go.microsoft.com/fwlink/?linkid=830387  
    "version": "0.2.0",  
}
```

```

    "configurations": [
      {
        "type": "node",
        "request": "attach",
        "name": "dapserver attach",
        "debugServer": 58870,
        "cmm": "~~/demo/arm/compiler/arm/cppdemo.cmm", //optional cmm to be called
        // "trace32Node": localhost, //IP address
        "trace32Port": 20000 //API port
      }
    ]
  }
}

```

5- Run **t32debugadapter.exe** in cmd line (can be found under
 ~~ /demo/env/vscode or can be downloaded from our [website](#)), or check the
 Tip below

6- In VSCode, go to **RUN AND DEBUG** and start the debug of **dapserver
 attach** (or just F5)

□ **Tip:**

You can automatically start the debug adapter (step 5) by using a
 preLaunchTask:

launch.json:

```

{
  "configurations": [
    {
      "type": "node",
      "request": "attach",
      "name": "start debug adapter and attach",
      "preLaunchTask": "start_debug_adapter",
      "debugServer": 58870,
      "cmm": "~~/demo/arm/compiler/arm/cppdemo.cmm",
      // "trace32Node": localhost, //IP address
      "trace32Port": 20000
    }
  ]
}

```

and tasks.json:

```

{
  "version": "2.0.0",
  "tasks": [{
    "label": "start_debug_adapter",
    "command": "start C:/T32/demo/env/vscode/bin/windows64/t32debugadapter.exe",
    // adjust path as needed
    "args": [],
    "type": "shell"
  }]
}

```

□ **Tip:**

If you have problem using the default port 58870, you can start t32debugadapter with the parameter:

t32debugadppter.exe --port=50000

Of course, make sure to set this port value to the "debugServer" parameter in the VSCode configuration.

Tip:

Using t32debugadapter version 0.0.20, you can start VSCode and t32debugadapter on a machine like WSL, and TRACE32 on windows, and use the parameters "translateInputPath" and "translateOutputPath" like below:

```
{
  "configurations": [
    {
      "type": "node",
      "request": "attach",
      "name": "dapserver attach",
      //"preLaunchTask": "start_debug_adapter",
      "debugServer": 58870,
      "cmm": "C:\\T32\\demo\\arm\\compiler\\gnu\\cppdemo.cmm",
      "trace32Node": "172.21.224.1", //IP address
      "trace32Port": "20000", //API port
      "translateInputPath": [
        ["C:\\T32\\demo\\arm\\compiler\\gnu\\src",
        "\\mnt\\c\\T32\\demo\\arm\\compiler\\gnu\\src"]],
      "translateOutputPath": [
        ["\\mnt\\c\\T32\\demo\\arm\\compiler\\gnu\\src",
        "C:\\T32\\demo\\arm\\compiler\\gnu\\src"]]
    }
  ]
}
```

The API port on TRACE32 needs to be launched with the option /RemoteHost ALLOW

SETUP.API.RCL /Interface TCP /Port 20000. /RemoteHost ALLOW

Comments (29)

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SB Sepehr Bijani

1 year ago

Hello, Since we are using linux environment for debugging and build, could you provide "t32debugadapter" for linux? BR, Sepehr Bijani

Wiem Wala Benayed

1 year ago

The Linux version will be available soon in our website.

For the moment, I will send it via email.

FC FLAVIO VINCENZO CONDEMI

1 year ago

Can I have the t32debugadapter linux version too?

Wiem Wala Benayed

1 year ago

The Linux and Mac versions are available in our [website](#)

FC FLAVIO VINCENZO CONDEMI

1 year ago

I just checked and I see there is a file in bin/pc_linux64 folder called t32debugadapter. In windows I execute the .exe file (I find it in bin/windows folder). I'm wondering how I can execute this file in Linux. I tried with "source t32debugadapter" command, but I got an error. Do I need to copy and paste the file somewhere else? Thank you in advance

Wiem Wala Benayed

1 year ago

You can simply call it in a terminal with: " <PATH>/t32debugadapter"

KM Kyrylo M

1 year ago

Tried to use this configuration and it fails on launch with following error: InitializeRequestArguments.__init__() got an unexpected keyword argument supportsANSIStyling' My Trace32 version is: TRACE32 for ARM Nightly Build (64-bit) Software Version: N.2024.10.000173431 Build: 173431. I got t32debugadapter.exe from https://repo.lauterbach.com/scripts/misc/env~vscode/_misc-env-vscode_20240921000808_all_files.zip

Wiem Wala Benayed

1 year ago

The error 'InitializeRequestArguments.__init__() got an unexpected keyword argument supportsANSIStyling' is now fixed.

Please use the new version (v0.0.7) of t32debugadapter available in our [website](#).

BM Bo Mellberg

1 year ago

Hi! I have the following setup: Linux build system, with Lauterbach setup via USB. Debugging works fine using the Trace32 front-end on Ubuntu. VSCode frontend on Windows laptop, connected to the Linux build system using Remote Host over SSH. This allows me to perform developing tasks easily from home as well as in-office, but the debugging still needs to be done on Ubuntu front-end (via Remote Desktop). How can I use VSCode as a debug front-end on my setup? All I can come up with is running the t32tcpusb on the Linux machine and on top of that run the t32debugadapter.exe on the Windows machine.

Wiem Wala Benayed

1 year ago

You can use the parameters "trace32Node" to set the IP address of the Linux machine. In this case TRACE32 can be started in Linux and VSCode + t32debugadapter in windows.

In this case, you may not see the source file as it is located in the Linux machine.

BM Bo Mellberg

1 year ago

I get "ECONNREFUSED 127.0.0.1:58870" when I try that. { "type": "node", "request": "attach", "name": "dapserver attach", "debugServer": 58870, "trace32Node": "10.142.0.139", "trace32Port": 20000 } trace32 is running on the Linux host with RCL=NETTCP and PORT=20000

Wiem Wala Benayed

1 year ago

Please make sure to use v0.0.8 of t32debugadapter

BM Bo Mellberg

1 year ago

"Please make sure to use v0.0.8 of t32debugadapter" Where can I find this? I can't even find the old version 0.0.7 anymore.

Kristoffer Martinsson

1 year ago

<https://repo.lauterbach.com/scripts.html> Search for vscode

P P.Z.

8 months ago

Is there a way to instruct trace32 from VSC to do CD.DO instead of DO only, when using an optional cmm to be loaded? I know I can put CD.DO inside the cmm script but this is not the most convenient way for me. We are running this in a specific system where the debugger HW is on Windows side while the VSC is inside WSL and docker container. Also the path translation option would be nice to have in a future version of t32debugadapter,

Wiem Wala Benayed

7 months ago

Sorry, there is no just option.

You can just include CD <path> in the beginning of your cmm script.

In the VSCode configuration, the path of the cmm must be windows style, as it will be sent via API to the TRACE32 PowerView.

AT Alessandro Turano

6 months ago

I get this error with RCL debug adapter v0.0.8, but I can't find any info about it online:

```
C:\T32\demo\env\vscode\bin\windows64>t32debugadapter.exe 2025-05-21 16:27:45,014 - lauterbach.msdp - INFO - Lauterbach MSDAP -> RCL debug adapter v0.0.8 2025-05-21 16:27:47,182 - lauterbach.msdp - INFO - request, initialize 2025-05-21 16:27:47,182 - lauterbach.msdp - INFO - response, initialize 2025-05-21 16:27:47,182 - lauterbach.msdp - INFO - event, initialized 2025-05-21 16:27:47,182 - lauterbach.msdp - INFO - request, attach 2025-05-21 16:27:47,243 - lauterbach.msdp - INFO - response, attach 2025-05-21 16:27:47,243 - lauterbach.msdp - INFO - request, setFunctionBreakpoints 2025-05-21 16:27:47,243 - lauterbach.msdp - INFO - response, setFunctionBreakpoints 2025-05-21 16:27:47,247 - lauterbach.msdp - INFO - request, configurationDone 2025-05-21 16:27:47,248 - lauterbach.msdp - INFO - response, configurationDone 2025-05-21 16:27:47,249 - lauterbach.msdp - INFO - request, enableNetworking 2025-05-21 16:27:47,249 - lauterbach.msdp - INFO - response, stopped 2025-05-21 16:27:47,249 - lauterbach.msdp - ERROR - system down 2025-05-21 16:27:47,249 - lauterbach.msdp - INFO - response, enableNetworking 2025-05-21 16:27:47,250 - lauterbach.msdp - INFO - event, stopped 2025-05-21 16:27:47,250 - lauterbach.msdp - ERROR - module '__main__' has no attribute 'EnableNetworkingRequest'
```

Wiem Wala Benayed

6 months ago

A new version of t32debugadapter v 0.0.11 is now available in our [website](#).

JC Juhun Choi

6 months ago

Is there a guide to connect multiple Simulators/Cores to the same vscode?

Wiem Wala Benayed

6 months ago

You can add another configuration with different API port value, and before connecting, you select the one that you need to connect to from the list of **RUN AND DEBUG**.

JC Juhun Choi

5 months ago

Hello, I have another question about CMM, Is there a way to run CMM on VSCode and check result at VSCode? It would be a big help, since our team uses a lot of CMM Scripts for quick debugging. Thanks

Wiem Wala Benayed

5 months ago

It depends on the type of result. It should be something that VSCode can display. For example, the value of a variable.

Could you clarify what specific result you're trying to obtain?

P P.Z.

5 months ago

We gave it a try and with the new version of t32debugAdapter (0.0.11) - it seems to very often hang the trace32 application and it is working very slow, This is was not the case for 0.0.8 - is there anyone experiencing the same?

AK Alan K.

5 months ago

I have the same feeling. Version 0.0.8 worked more stable. With newest 0.0.11 whole setup becomes unresponsive very often. It works little better when you collapse VARIABLES preview in VSC but still likes to hang from unknown reason. At the same time, Trace32 enters some strange state requiring to force close it using task manager.

PK Peter Kunakh

4 months ago

I have the same. 0.0.8 doesn't work at all - ERROR - module '__main__' has no attribute 'EnableNetworkingRequest' 0.0.11 is super unstable and most of the time crashes Trace32 application. When could we expect a new release version with fixed stability issues?

Wiem Wala Benayed

4 months ago

Some fixes were done to TRACE32. Please register using this link, so I can send you a recent TRACE32 version.

<https://www.lauterbach.com/frames.html?register.html>

JK Jeonggyu Kim

1 month ago

I tried this with 2 versions(0.0.6, 0.0.8) I faced "supportsANSIStyling" error on 0.0.6. I faced "module '__main__' has no attribute 'EnableNetworkingRequest'" error on 0.0.8. I want to try this with 0.0.11. but i can't find where can i download 0.0.11. Issue "EnableNetworkingRequest" is not solved yet?

JK Jeonggyu Kim

1 month ago

i also faced this error in 0.0.8. ERROR - Messages out of sync, connection broken. do you have solution about this error?

Wiem Wala Benayed

1 month ago

We have some issue on the build server. We are working on it. Meanwhile, I will send you a link via email for the latest version.