

\*\*\*\*\*Draft\*\*\*\*\*

**Pico Tools**  
**SDK OPENOCD**  
**11/08/21**

\*\*\*\*\*Draft\*\*\*\*\*

```
/opt/  
pico-extras  pico-sdk  
pico-examples pico-playground
```

Backups:

```
devel@mypi3-16:/media/devel/1b763776-4e1d-499c-9f24-a116a58c161f $ ls pico/  
installed-openocd081421-71510a.img  pico-examples.img  pico-playground.img  
openocd081421-71510a.img          pico-extras.img  pico-sdk.img
```

```
cd opt  
sudo unsquashfs -d pico-sdk pico-sdk.img  
sudo unsquashfs -d pico-examples pico-examples.img
```

Openocd was download from “<https://github.com/raspberrypi/openocd.git>”  
An img file “openocd081421-71510a.img” was created of the

```
commit 71510a77a61c6eb2b1266e00010f8f258785a54b (grafted, HEAD -> rp2040, origin/rp2040,  
origin/HEAD)  
Author: Peter Lawrence <12226419+majbthrd@users.noreply.github.com>  
Date: Thu Jun 3 14:06:09 2021 -0500
```

```
tcl/boards: add pico-debug.cfg
```

The folder “/home/devel/local/openocd” was created from the file “installed-openocd081421-71510a.img” in “/home/devel” and executing the command “sudo unsquashfs -d openocd ../installed-openocd081421-71510a.img” in “/home/devel/local” folder.

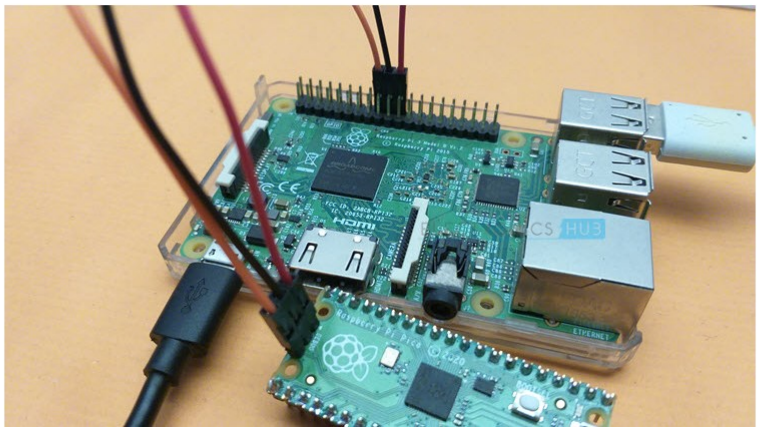
```
ls -la local/openocd/bin/openocd
```

```
Rpi  
SWDIO----18 red-----black-----black-----  
grd-----20 yellow----red-----blue-----  
SWCLK---22 orange----orange-----green-----
```

```
Pico  
blue----swclk  
green---grd  
black---swdio
```

The following table shows all the necessary connections between Raspberry Pi and Raspberry Pi Pico that you need to make.

Raspberry Pi Pico	Raspberry Pi
SWDIO	GPIO 24 (PIN 18)
SWD GND	GND (PIN 20)
SWCLK	GPIO 25 (PIN 22)



How to Program and Debug Raspberry Pi Pico C/C++ Getting started with Raspberry Pi Pico

https://www.electronicshub.org/programming-raspberry-pi-pico-with-swd/


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## Raspberry Pi Pico SWD Programming and Debug

Like all ARM Cortex processors, the Raspberry Pi Pico also has dedicated hardware for debugging via the SWD Interface. The two wires required for SWD Debugging are called SWDIO (bidirectional SWD Data) and SWCLK (SWD Clock).

On the Raspberry Pi Pico, the SWD Pins are separated from the rest of the GPIO Pins and are placed at the bottom of the Board.



The 2-wire SWD Interface of RP2040 on the Raspberry Pi Pico board allows you to do the following:

- Upload program into External Flash or Internal SRAM.
- Control the state of execution of the processor i.e., run, halt, step, set breakpoints, etc.
- Access processor memory and I/O peripherals (which are memory mapped) through the system bus.

Pico The labels swclk grd swdio are only on the bottom side.

pico-pi-sdk-build.txt has the instruction from the video below.

Revisit the video below

<https://www.youtube.com/watch?v=UZwq3eb5My0>

Downloaded the getting-started

<https://datasheets.raspberrypi.com/pico/getting-started-with-pico.pdf>