Installing the Pico toolchain on Windows 10

Note: Using Raspberry Pi Pico with Windows 7 or 8 is not officially supported.

To build Pico projects you will need to install the following tools:

- ARM GCC compiler
- CMake
- Build Tools for Visual Studio 2019
- Python 3
- Git

Installing ARM GCC Compiler

Download the Windows Installer from:

https://developer.arm.com/tools-and-software/open-source-software/developer-tools/gnu-toolchain/gnu-rm/downloads

During installation you should tick the box to register the path to the ARM compiler as an environment variable in the Windows shell:

🌍 GNU Arm Embedded Toolch	nain 10-2020-q4-major — 🗌	\times
	Completing the GNU Arm Embed Toolchain 10-2020-q4-major 10 2020 Setup Wizard	lded
	GNU Arm Embedded Toolchain 10-2020-q4-major 10 20 has been installed on your computer.	020
	Click Finish to close this wizard.	
	✓ <u>S</u> how Readme	
	Add path to environment variable	I
	< <u>B</u> ack <u>F</u>inish C	ancel

Installing CMake

Download the Windows CMake Installer from: https://cmake.org/download/

Note: Version 3.21.0 has problems, please download and use version 3.20.5

During the installation add CMake to the system PATH for all users:

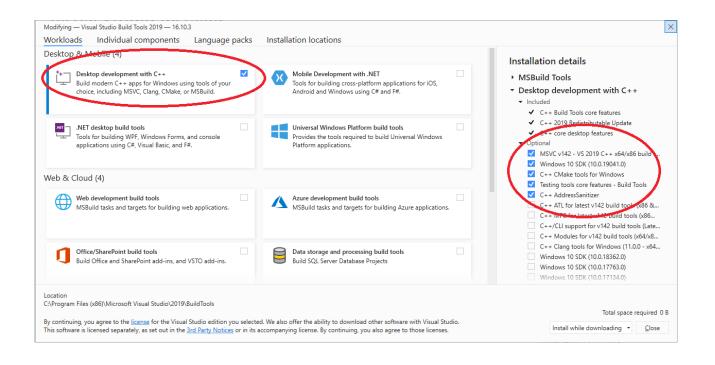
😥 Install Options	_		×
Install Options			
Choose options for installing CMake 3.19.8			
By default CMake does not add its directory to the system PATH.			
O Do not add CMake to the system PATH			
Add CMake to the system PATH for all users			
○ Add CMake to the system PATH for the current user			
Create CMake Desktop Icon			
<u>B</u> ack <u>N</u> ext		Can	cel

Installing Build Tools for Visual Studio 2019

Download the Windows Installer from:

https://visualstudio.microsoft.com/downloads/#build-tools-for-visual-studio-2019

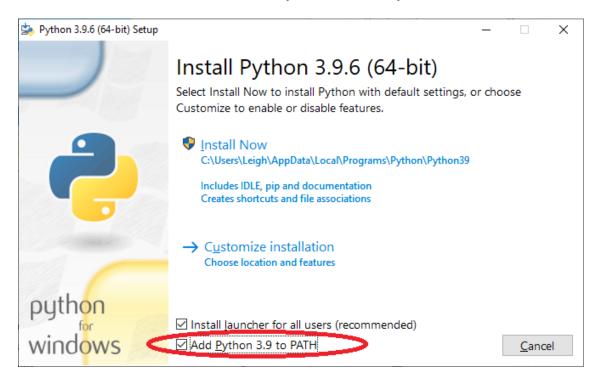
When prompted by the Build Tools for Visual Studio installer you need to install the C++ build tools only. You must install the full "Windows 10 SDK" package:



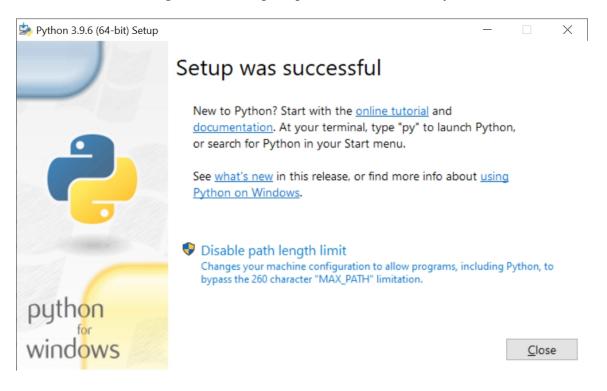
Installing Python 3 If you already have Python 3 installed on your PC (for example if you have already installed the ESP toolchain) skip this section and do not re-install Python.

Download Windows Installer from: https://www.python.org/downloads/windows/

Ensure that it's installed 'for all users' and add Python 3.9 to the system PATH:



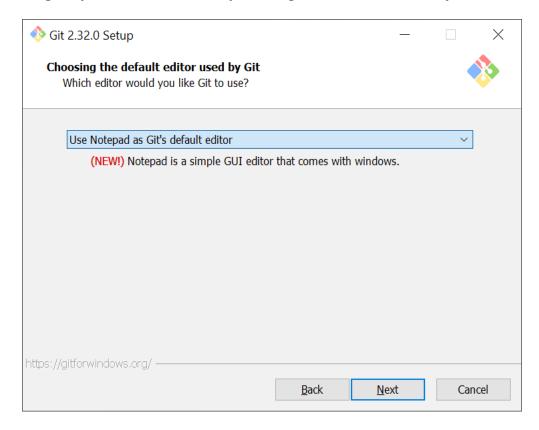
Disable the MAX_PATH length limit when prompted at the end of the Python installation.



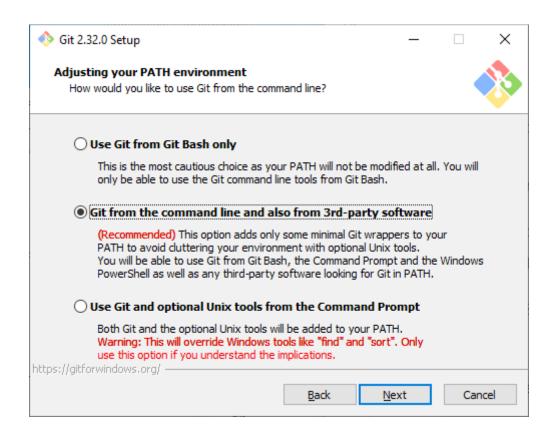
Installing Git

Download the Windows Installer from: https://git-scm.com/download/win

When installing Git you should ensure that you change the default editor away from vim:



Ensure you tick the checkbox to allow Git to be used from third-party tools:



Select "Checkout as is, commit as-is":

🚸 Git 2.32.0 Setup	_		×			
Configuring the line ending conversions How should Git treat line endings in text files?						
O Checkout Windows-style, commit Unix-style line endings						
Git will convert LF to CRLF when checking out text files. When text files, CRLF will be converted to LF. For cross-platform pro this is the recommended setting on Windows ("core.autocrlf" i	ojects,	-				
O Checkout as-is, commit Unix-style line endings						
Git will not perform any conversion when checking out text files. When committing text files, CRLF will be converted to LF. For cross-platform projects, this is the recommended setting on Unix ("core.autocrlf" is set to "input").						
Checkout as-is, commit as-is						
Git will not perform any conversions when checking out or committing text files. Choosing this option is not recommended for cross-platform projects ("core.autocrlf" is set to "false"). https://gitforwindows.org/						
Back	ext	Car	ncel			

Select "Use Windows' default console window":

🚸 Git 2.32.0 Setup	_		×	
Configuring the terminal emulator to use with Git Bash Which terminal emulator do you want to use with your Git Bash?			>	
O Use MinTTY (the default terminal of MSYS2)				
Git Bash will use MinTTY as terminal emulator, which sports a r non-rectangular selections and a Unicode font. Windows cons as interactive Python) must be launched via `winpty` to work	ole progra	ams (such		
Use Windows' default console window				
Git will use the default console window of Windows ("cmd.exe"), which works well with Win32 console programs such as interactive Python or node.js, but has a very limited default scroll-back, needs to be configured to use a Unicode font in order to display non-ASCII characters correctly, and prior to Windows 10 its window was not freely resizable and it only allowed rectangular text selections.				
https://gitforwindows.org/	ext	Canc	el	

Check "Enable experimental support for pseudo consoles" during the installation process:

🚸 Git 2.32.0 Setup	_		×		
Configuring experimental options These features are developed actively. Would you like to try them?					
Enable experimental support for pseudo consoles.					
(NEW!) This allows running native console programs like Node or Python in a Git Bash window without using winpty, but it still has known bugs.					
Enable experimental built-in file system monitor					
(NEW!) Automatically run a <u>built-in file system watcher</u> , to speed up common operations such as `git status`, `git add`, `git commit`, etc in worktrees containing many files.					
https://gitforwindows.org/					
<u>B</u> ack <u>I</u> ns	tall	Ca	ancel		

Installing the Pico SDK

Use Git to download the Pico SDK to a location on your PC.

For example, install to your user Downloads directory: C:\Users\YourName\Downloads\pico-sdk

Run a command prompt (type "cmd" at the start search box) and run the following commands:

```
cd Downloads
git clone -b master https://github.com/raspberrypi/pico-sdk.git
cd pico-sdk
git submodule update --init
```

Setting up Flowcode for use with the Pico toochain

Copy the location of the Pico sdk (e.g. C:\Users\YourName\Downloads\pico-sdk) into the Global Settings, Locations tab:

Options	\sim	×
Application Flowcha	rt Schime Locations	
Send compiler output to	p	
\$(srcdir)	· · · · · · · · · · · · · · · · · · ·	
✓ Create an embedde	d project backup file as	
\$(srcdir)\\$(t	arget).fcfx.001 🔻 .	
Create an App Deve	eloper project backup file as	_
\$(srcdir)\\$(t	arget).fcsx.001	
Override toolchain loca	tions:	_
PIC:	C: \Program Files (x86) \Flowcode \Common \Compilers \picv2 \	
PIC16:	C:\Program Files (x86)\Flowcode\Common\Compilers\pic16\	
PIC32:	C:\Program Files (x86)\Flowcode\Common\Compilers\pic32\	
AVR:	C:\Program Files (x86)\Flowcode\Common\Compilers\avrv5\	
ARM:	C:\Program Files (x86)\Flowcode\Common\Compilers\arm\	
STARM:	C:\Program Files (x86)\Flowcode\Common\Compilers\starm\	
RPI:	C:\Program Files (x86)\Flowcode\Common\Compilers\rpi\	
ESP:	C:\Users\Leigh\Deskton\esp-idf\	
PICO:	C: \Users \Leigh \Downloads \pico-sdk	
Look for components a		
C:\ProgramData\Mat	ixTSL\FlowcodeV9\nonrelease;	
	v	
	Clear component cache	
Restore	Defaults OK Canc	el

Programming The Pico

Make sure you have the RPI pack installed and you have got the RPI included in your licence & you are running Flowcode v9.2 or later

First, make sure you can see the Pico chip pack is enabled:



To do that, select **Help, Licensing**, **View**

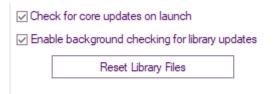
If not, you may just	t need to	refresh your license.	
To do that Select H	Ielp, Lic	ensing, Manage.	
Select My Flowcoc			
Enter your Account	t name ar	nd password, then select Activate	
You will see a popu	ip stating	;;	
	C:\PROG	RA~2\FLOWCO~1\data\tools\FC_LIC~1.EXE	×
	<u> </u>	Your key has been accepted - thank you for activatin product. Please close and restart Flowcode to comp registration process.	-
			OK

Flowcode will then Restart. Select **New Project** Check to see if you have the Pico targets. There is a seperate PICO chain under Choose a Target:

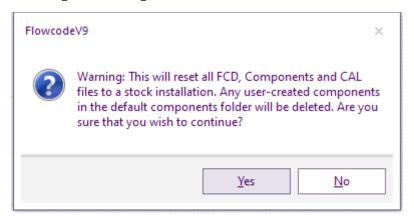


If you see the Pico targets then you can go straight to Sending Your First Program on the next page.

If you can't see the Pico targets, you will need to refresh your library. To doc that, select **View**, **Global Settings...** Make sure the following is selected: **Check for core updates on launch**. & **Enable background checking for library updates**. Select **Reset Library Files**



You will get a warning:



Select Yes.

A message will pop up stating to restart Flowcode, that can be ignored for now Select **Help**, **Library Updates...**

Change **Files in-use** to **Full database**.

The new library updates for the Pico should now be displayed within the Updates window. Select **Download**.

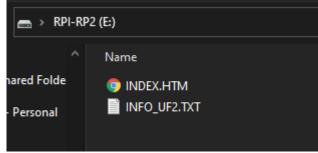
select File, Reload Or the Reload Icon ^C

Now you should be fully up-to-date with all the required files:

	PICO			
	- Misc			
	 Raspberry_Pi_Pico 			
	Raspberry_Pi_RP2040			
4	Deerkerer D:			

Sending Your First Program

Before sending your flowchart to the Pico, you must first enable **boot mode**. To do that, make sure the pico is not connected to your PC. Hold the **BOOTSEL** down and plug the Pico into your PC. If you hear the USB connected sound and you also get a popup like this:



Then your Pico is ready to be programmed.