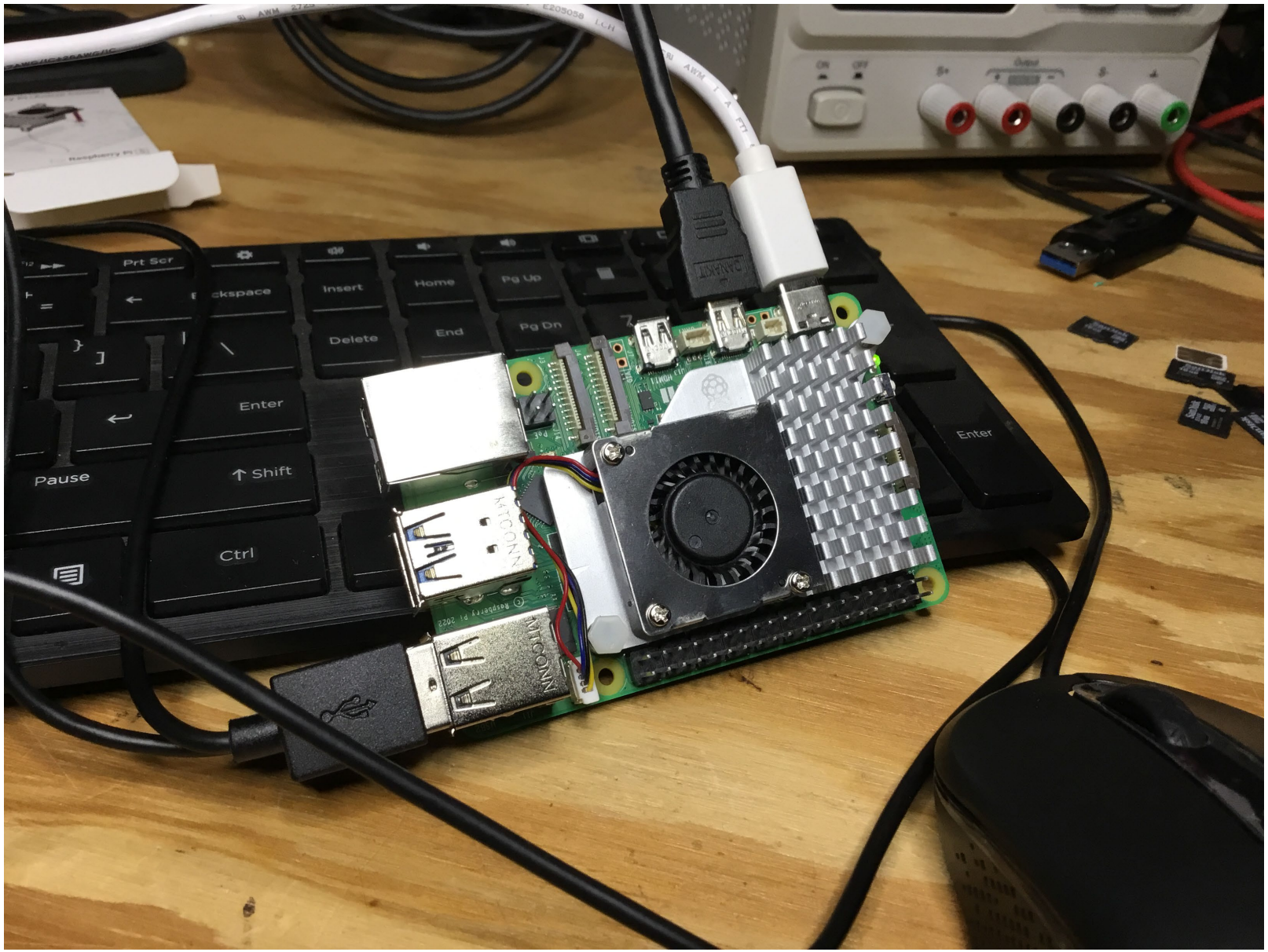
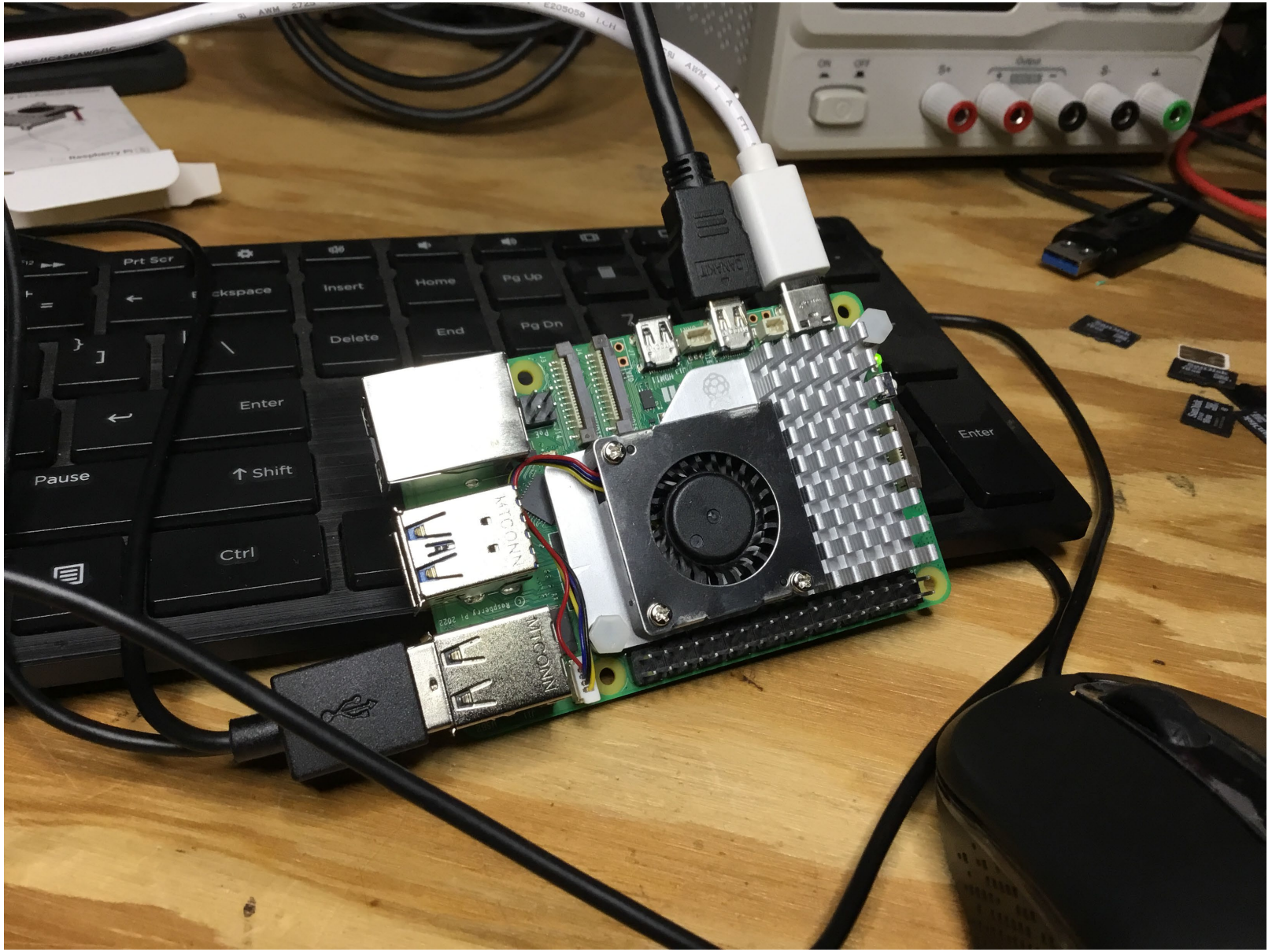
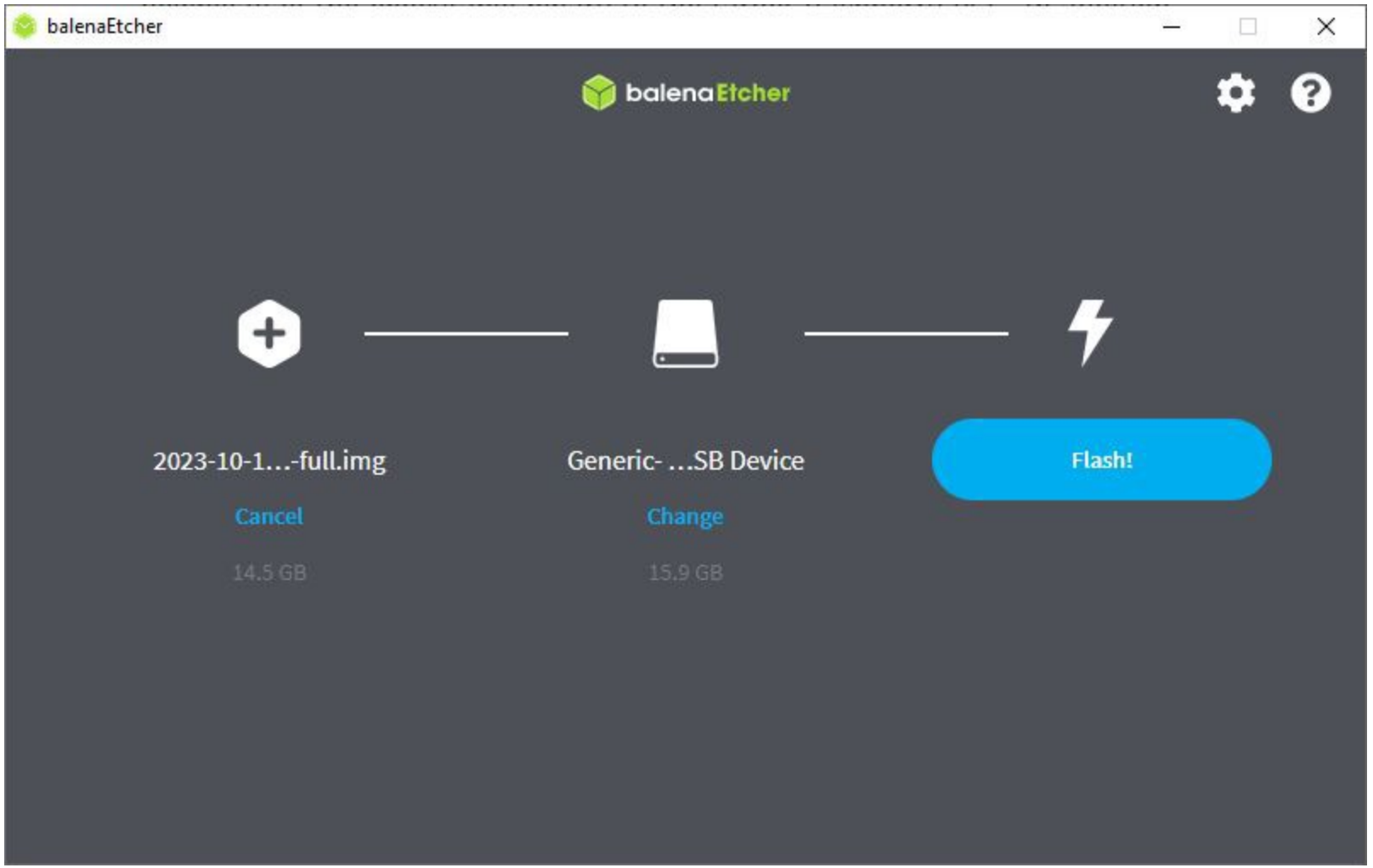
Raspberry Pi 5 Software Development Using Eclipse How-To

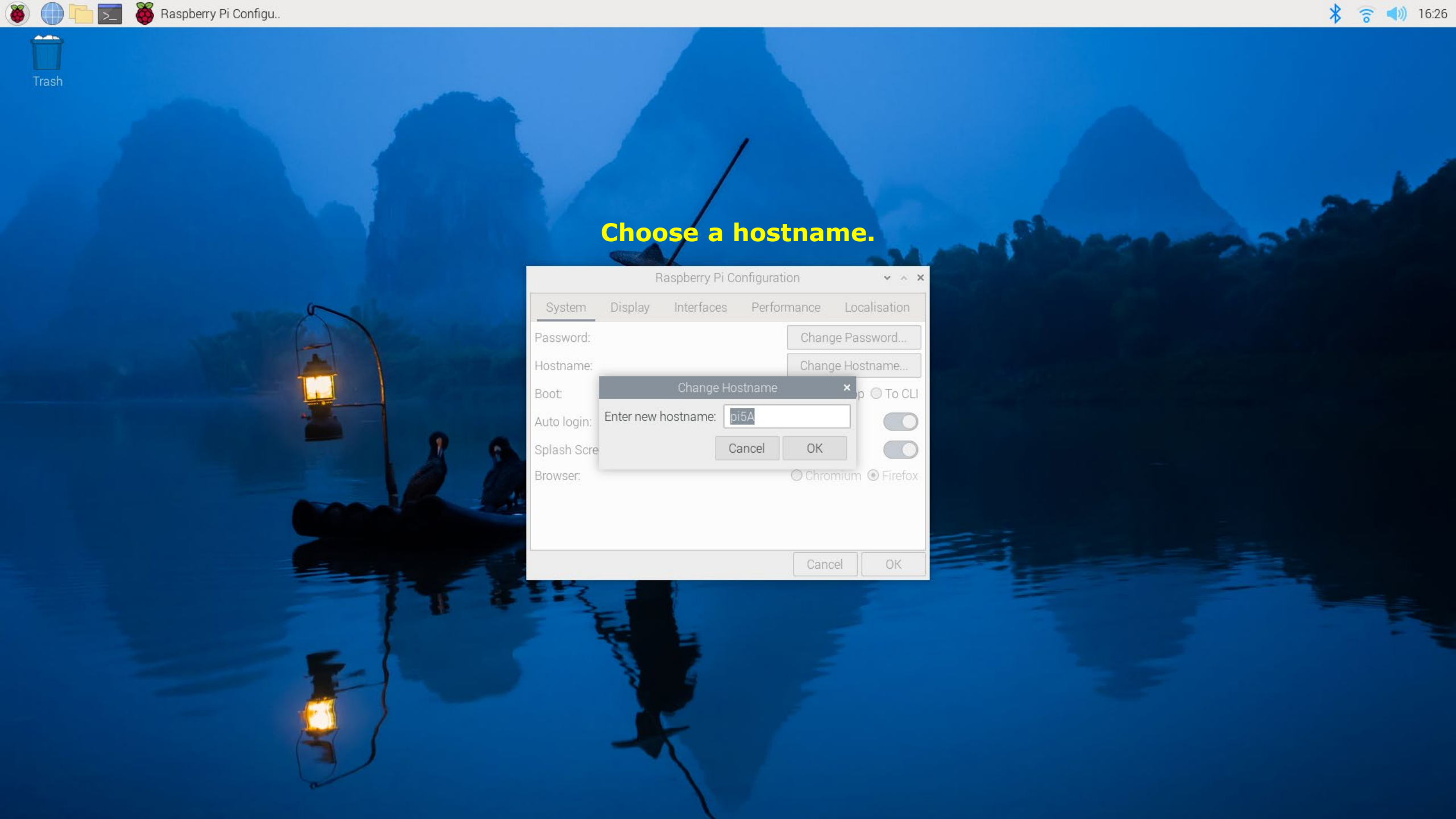


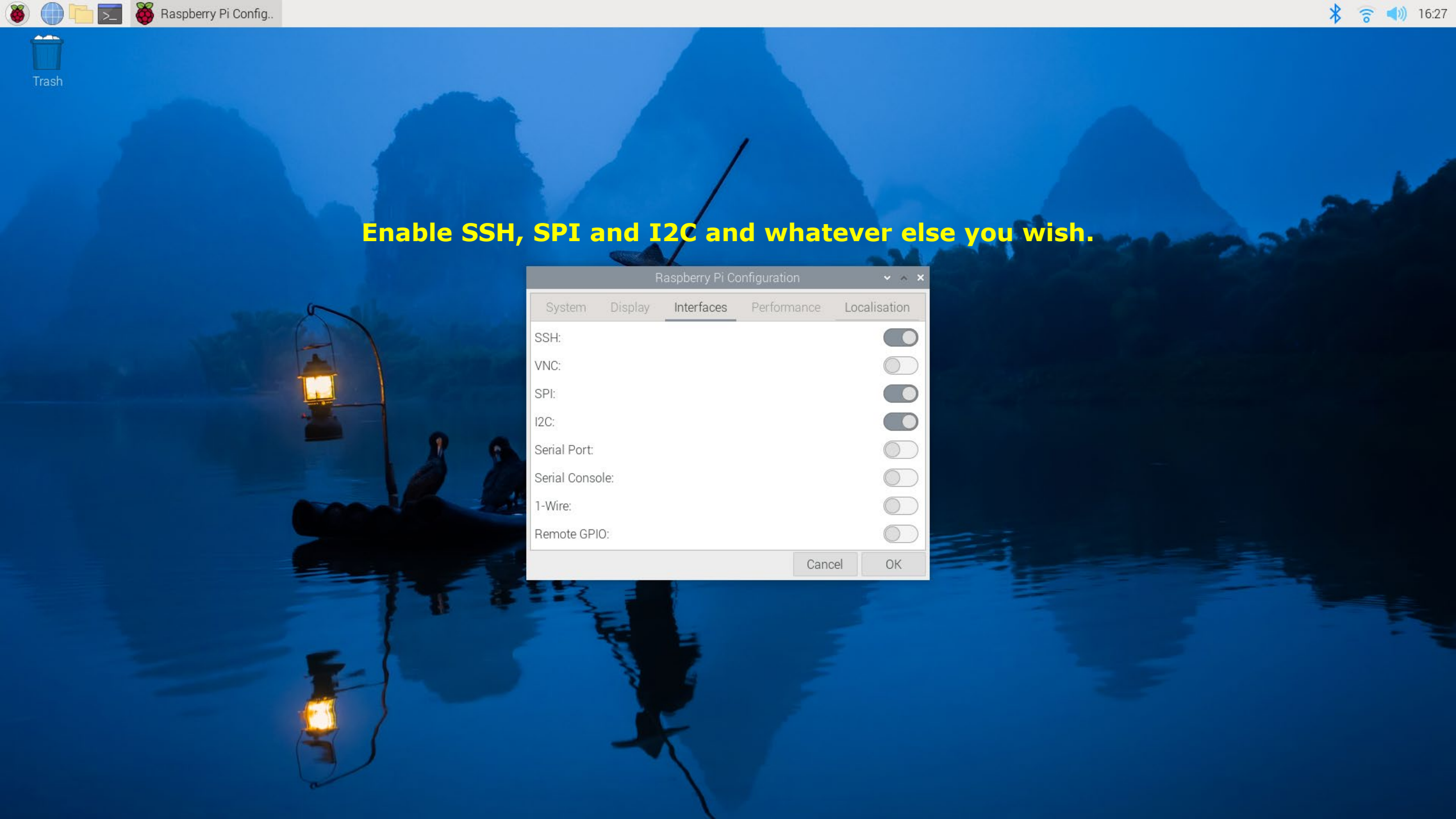
Load the Raspberry Pi 5 OS Image Using balenaEtcher and Setup the Raspberry Pi 5

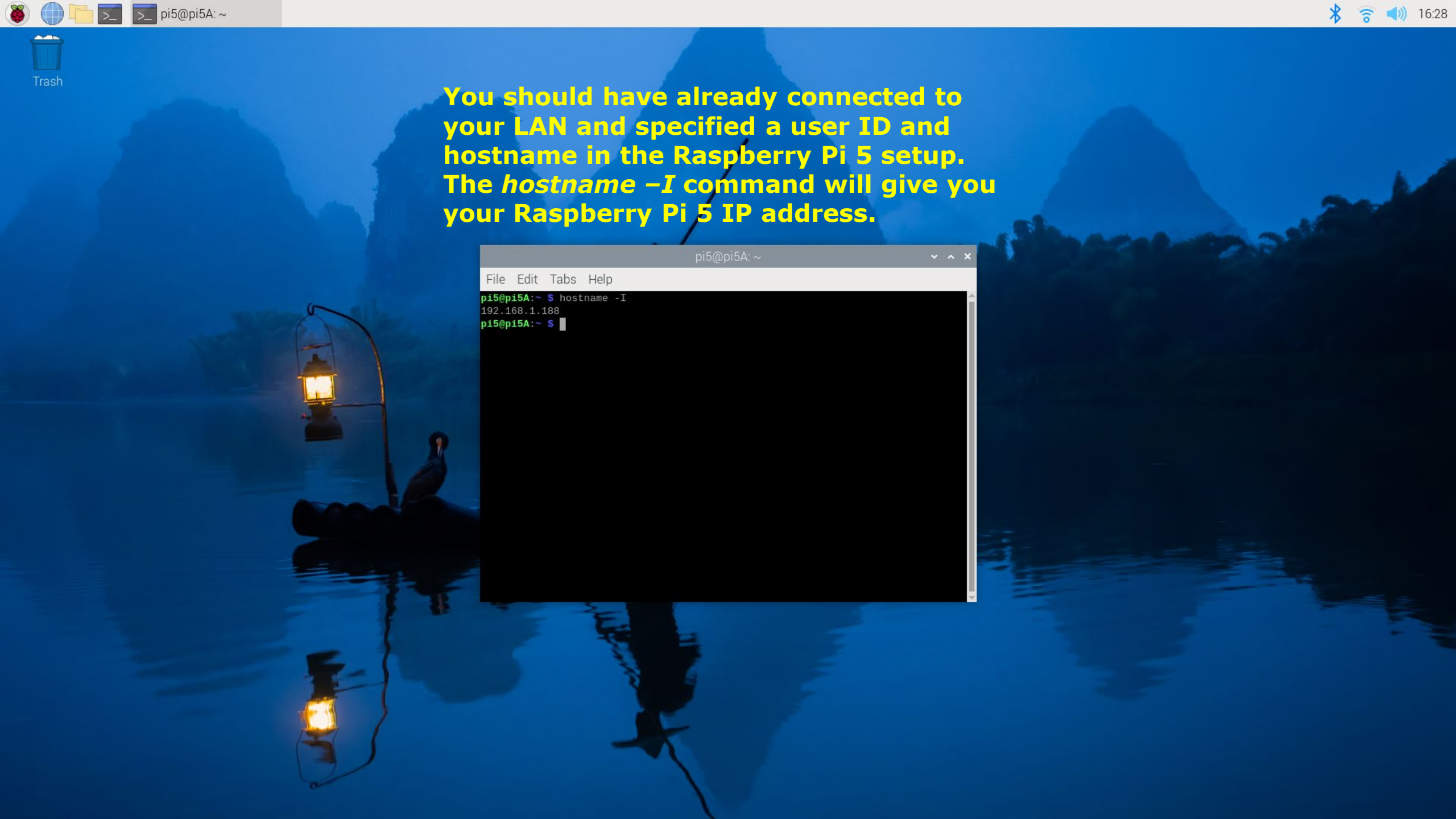


Download the Bookworm Image from the Raspberry Pi website.
Use balenaEtcher to transfer the Bookworm image to a microSD card.

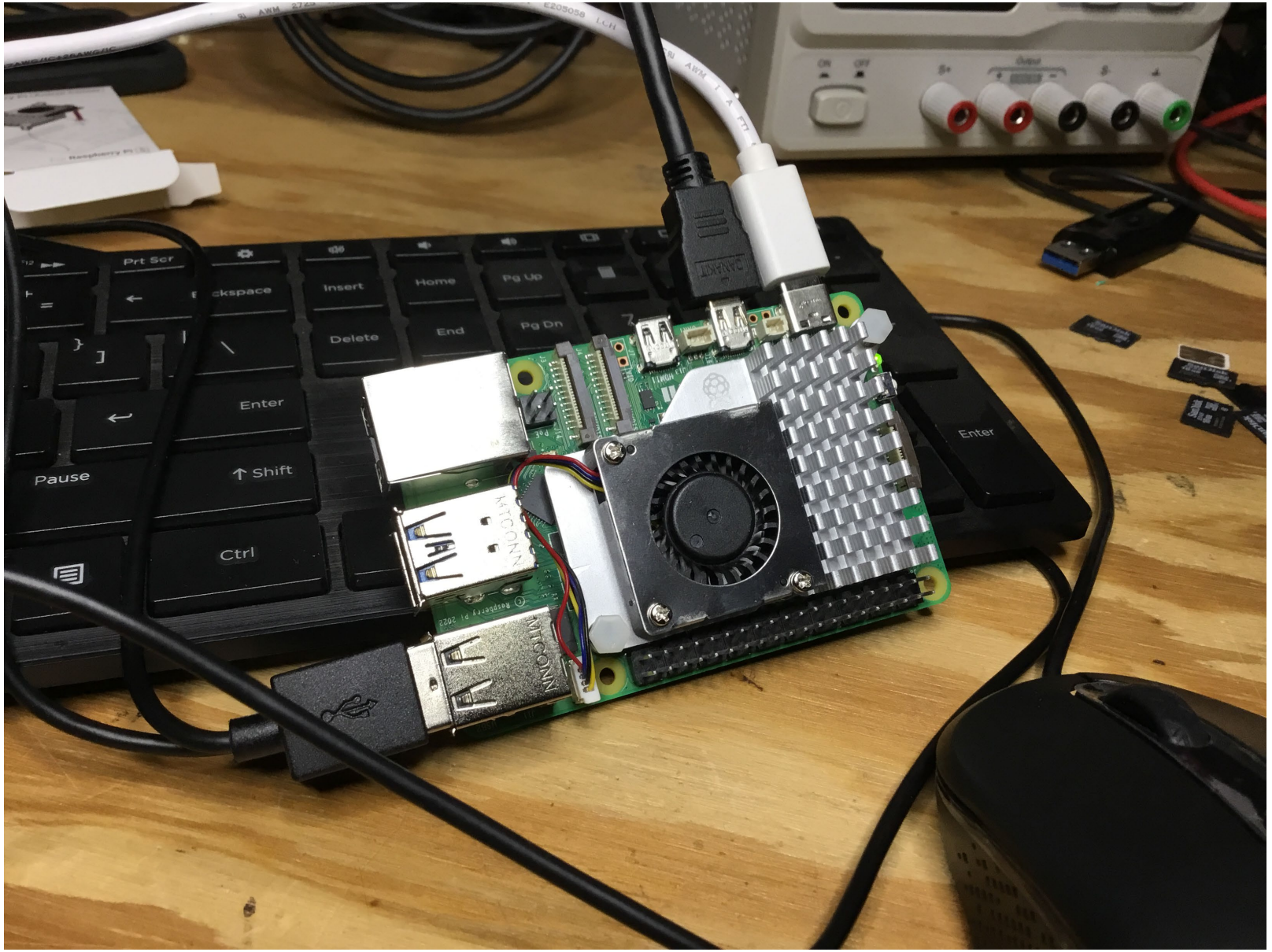


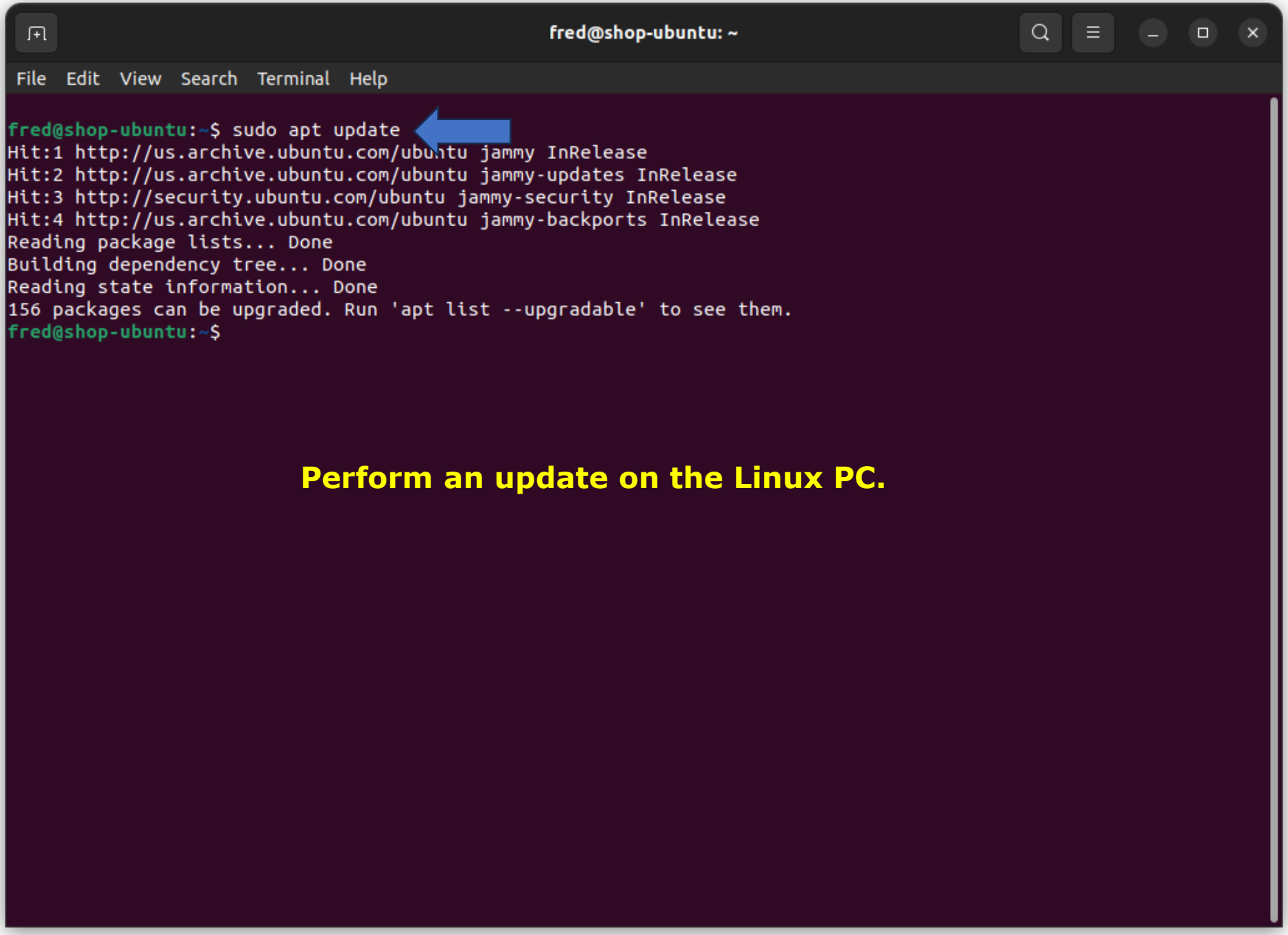

Raspberry Pi Configu..
16:26
Trash
Choose a hostname.
Raspberry Pi Configuration
System
Display
Interfaces
Performance
Localisation
Password:
Change Password...
Hostname:
Change Hostname...
Boot:
To CLI
Auto login:
Splash Scre
Browser:
Chromium
Firefox
Change Hostname
Enter new hostname:
pi5A
Cancel
OK
Cancel
OK


Raspberry Pi Config..
16:27
Trash
Enable SSH, SPI and I2C and whatever else you wish.
Raspberry Pi Configuration
System
Display
Interfaces
Performance
Localisation
SSH:
VNC:
SPI:
I2C:
Serial Port:
Serial Console:
1-Wire:
Remote GPIO:
Cancel
OK

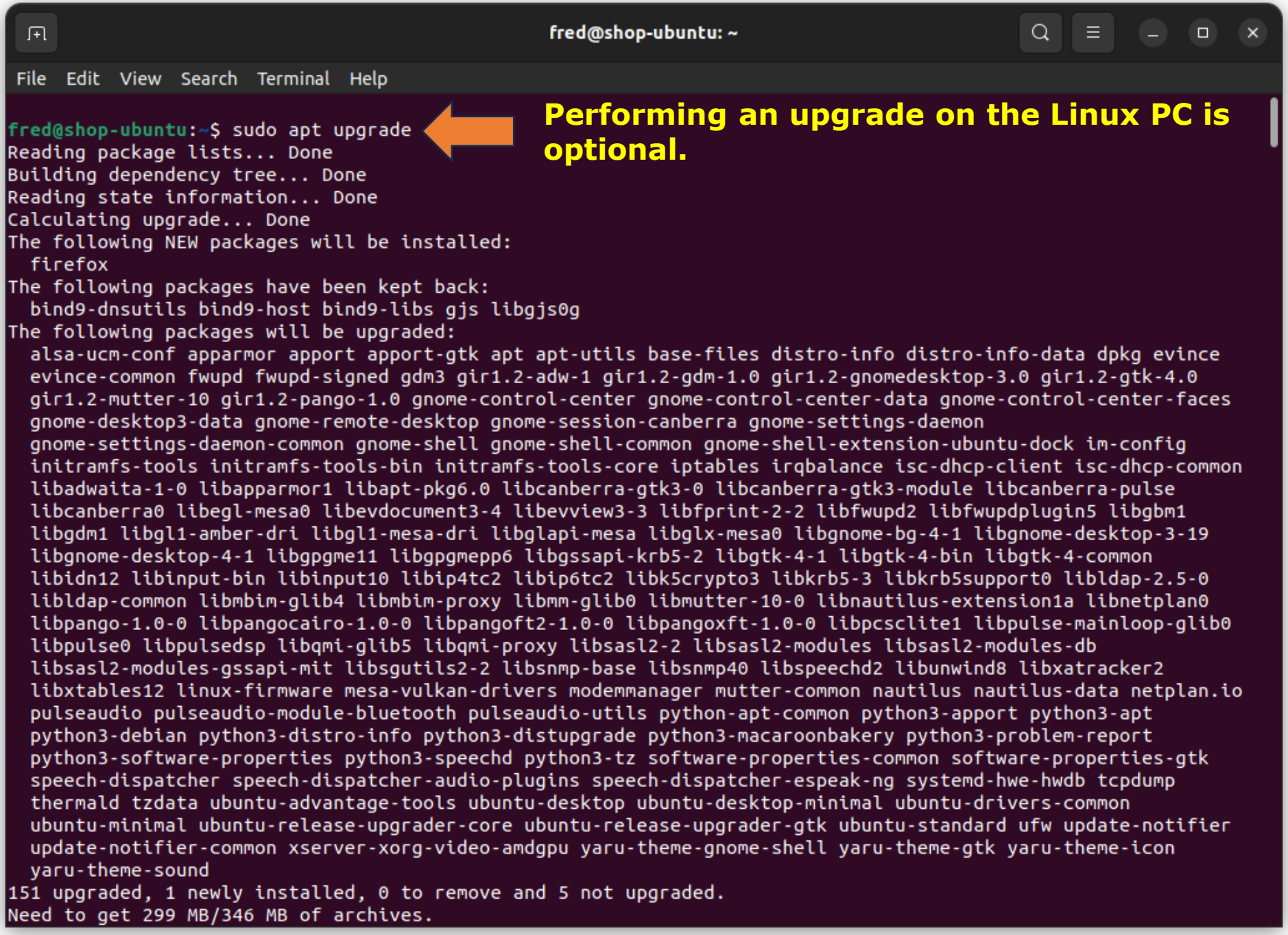

pi5@pi5A: ~
16:28
Trash
You should have already connected to your LAN and specified a user ID and hostname in the Raspberry Pi 5 setup. The *hostname –I* command will give you your Raspberry Pi 5 IP address.
pi5@pi5A: ~
File Edit Tabs Help
pi5@pi5A:~ $ hostname -I
192.168.1.188
pi5@pi5A:~ $

Update the Ubuntu PC and Load the Cross Compiler Toolchain

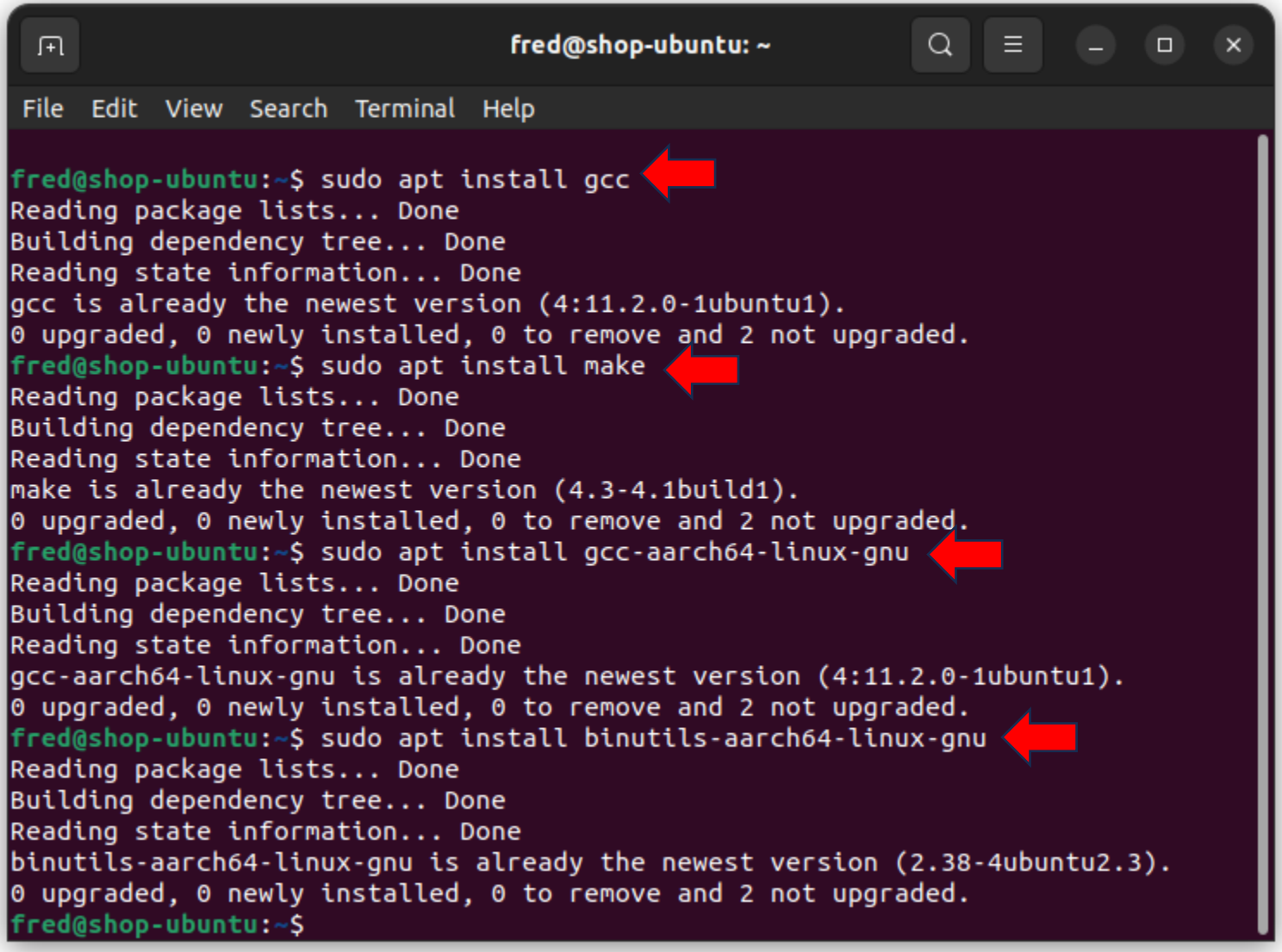




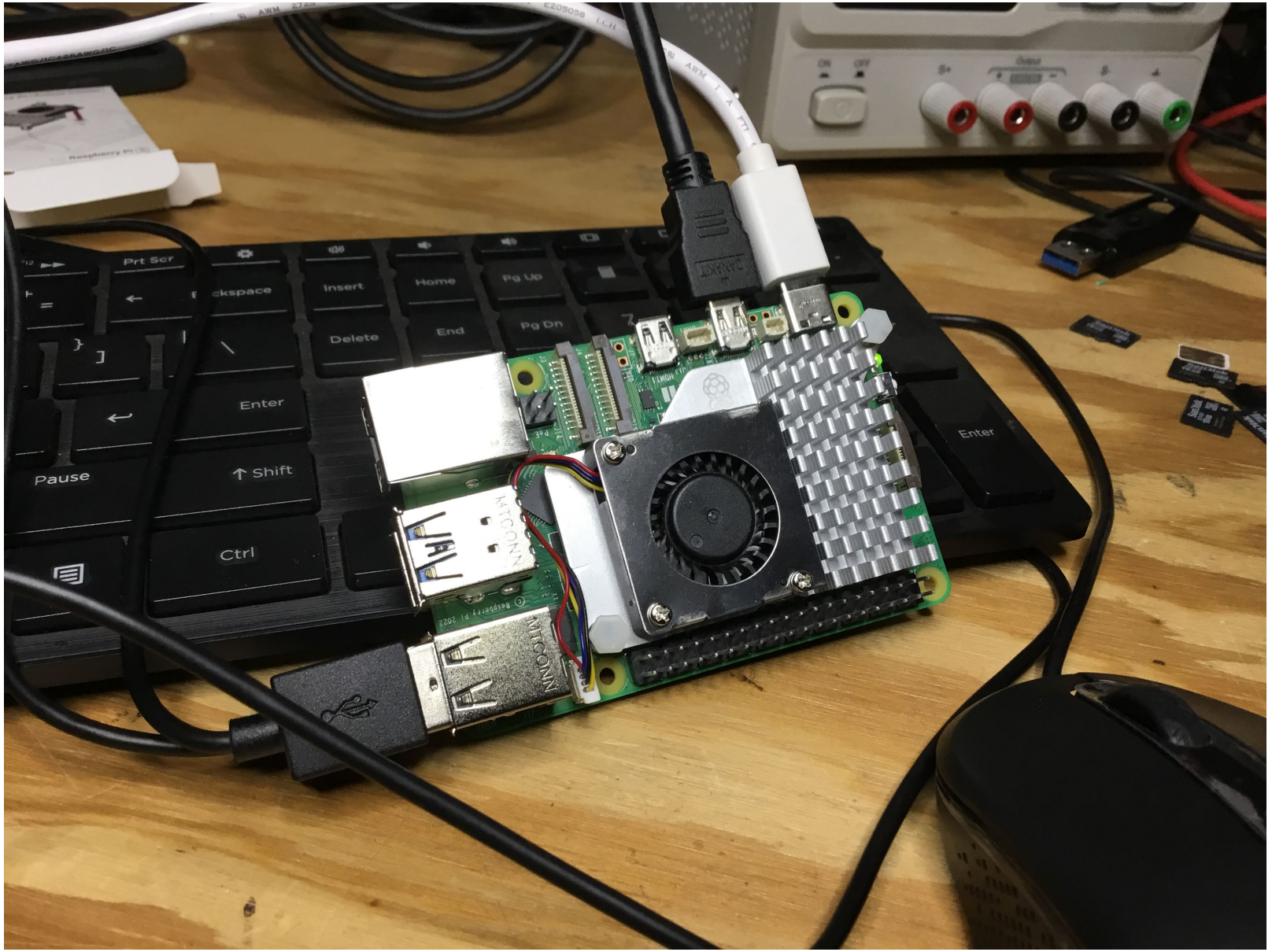
Perform an update on the Linux PC.


fred@shop-ubuntu: ~
File Edit View Search Terminal Help
fred@shop-ubuntu:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
firefox
The following packages have been kept back:
bind9-dnsutils bind9-host bind9-libs gjs libgjs0g
The following packages will be upgraded:
alsa-ucm-conf apparmor apport apport-gtk apt apt-utils base-files distro-info distro-info-data dpkg evince
evince-common fwupd fwupd-signed gdm3 gir1.2-adw-1 gir1.2-gdm-1.0 gir1.2-gnomedesktop-3.0 gir1.2-gtk-4.0
gir1.2-mutter-10 gir1.2-pango-1.0 gnome-control-center gnome-control-center-data gnome-control-center-faces
gnome-desktop3-data gnome-remote-desktop gnome-session-canberra gnome-settings-daemon
gnome-settings-daemon-common gnome-shell gnome-shell-common gnome-shell-extension-ubuntu-dock im-config
initramfs-tools initramfs-tools-bin initramfs-tools-core iptables irqbalance isc-dhcp-client isc-dhcp-common
libadwaita-1-0 libapparmor1 libapt-pkg6.0 libcanberra-gtk3-0 libcanberra-gtk3-module libcanberra-pulse
libcanberra0 libegl-mesa0 libevdocument3-4 libevview3-3 libfprint-2-2 libfwupd2 libfwupdplugin5 libgbm1
libgdm1 libgl1-amber-dri libgl1-mesa-dri libglapi-mesa libglx-mesa0 libgnome-bg-4-1 libgnome-desktop-3-19
libgnome-desktop-4-1 libgpgme11 libgpgmepp6 libgssapi-krb5-2 libgtk-4-1 libgtk-4-bin libgtk-4-common
libidn12 libinput-bin libinput10 libip4tc2 libip6tc2 libk5crypto3 libkrb5-3 libkrb5support0 libldap-2.5-0
libldap-common libmbim-glib4 libmbim-proxy libmm-glib0 libmutter-10-0 libnautilus-extension1a libnetplan0
libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpangoxft-1.0-0 libpcsclite1 libpulse-mainloop-glib0
libpulse0 libpulsedsp libqmi-glib5 libqmi-proxy libsasl2-2 libsasl2-modules libsasl2-modules-db
libsasl2-modules-gssapi-mit libsgutils2-2 libsnmp-base libsnmp40 libspeechd2 libunwind8 libxatracker2
libxtables12 linux-firmware mesa-vulkan-drivers modemmanager mutter-common nautilus nautilus-data netplan.io
pulseaudio pulseaudio-module-bluetooth pulseaudio-utils python-apt-common python3-apport python3-apt
python3-debian python3-distro-info python3-distupgrade python3-macaroonbakery python3-problem-report
python3-software-properties python3-speechd python3-tz software-properties-common software-properties-gtk
speech-dispatcher speech-dispatcher-audio-plugins speech-dispatcher-espeak-ng systemd-hwe-hwdb tcpdump
thermald tzdata ubuntu-advantage-tools ubuntu-desktop ubuntu-desktop-minimal ubuntu-drivers-common
ubuntu-minimal ubuntu-release-upgrader-core ubuntu-release-upgrader-gtk ubuntu-standard ufw update-notifier
update-notifier-common xserver-xorg-video-amdgpu yaru-theme-gnome-shell yaru-theme-gtk yaru-theme-icon
yaru-theme-sound
151 upgraded, 1 newly installed, 0 to remove and 5 not upgraded.
Need to get 299 MB/346 MB of archives.
Performing an upgrade on the Linux PC is optional.

Install gcc, make, gcc-aarch64-linux-gnu and binutils-aarch64-linux-gnu.



Download the Install the Linux Flavor of Eclipse



Eclipse Installer 2023-09 R

The Eclipse Installer 2023-09 R now includes a JRE for macOS, Windows and Linux.

Try the Eclipse **Installer** 2023-09 R

The easiest way to install and update your Eclipse Development Environment.

1,144,486 Installer Downloads
1,046,641 Package Downloads and Updates

Download

macOS x86_64 | AArch64
Windows x86_64
Linux x86_64 | AArch64

5 Steps to Install Eclipse

We've recently introduced the Eclipse Installer, a new and more efficient way to install Eclipse. It is a proper installer (no zip files), with a self-extracting download that leads you through the installation process. For those who prefer not to use the Installer, the packages and zip files are still available on our package download page.

1. Download the Eclipse Installer

Download Eclipse Installer from http://www.eclipse.org/downloads

Eclipse is hosted on many mirrors around the world. Please select the one closest to you and start to download the Installer

The Eclipse Installer 2023-09 R now includes a JRE for macOS, Windows and Linux.

Get **Eclipse IDE 2023-09**

Install your favorite desktop IDE packages.

Download x86_64
Download AArch64

Download Packages | Need Help?

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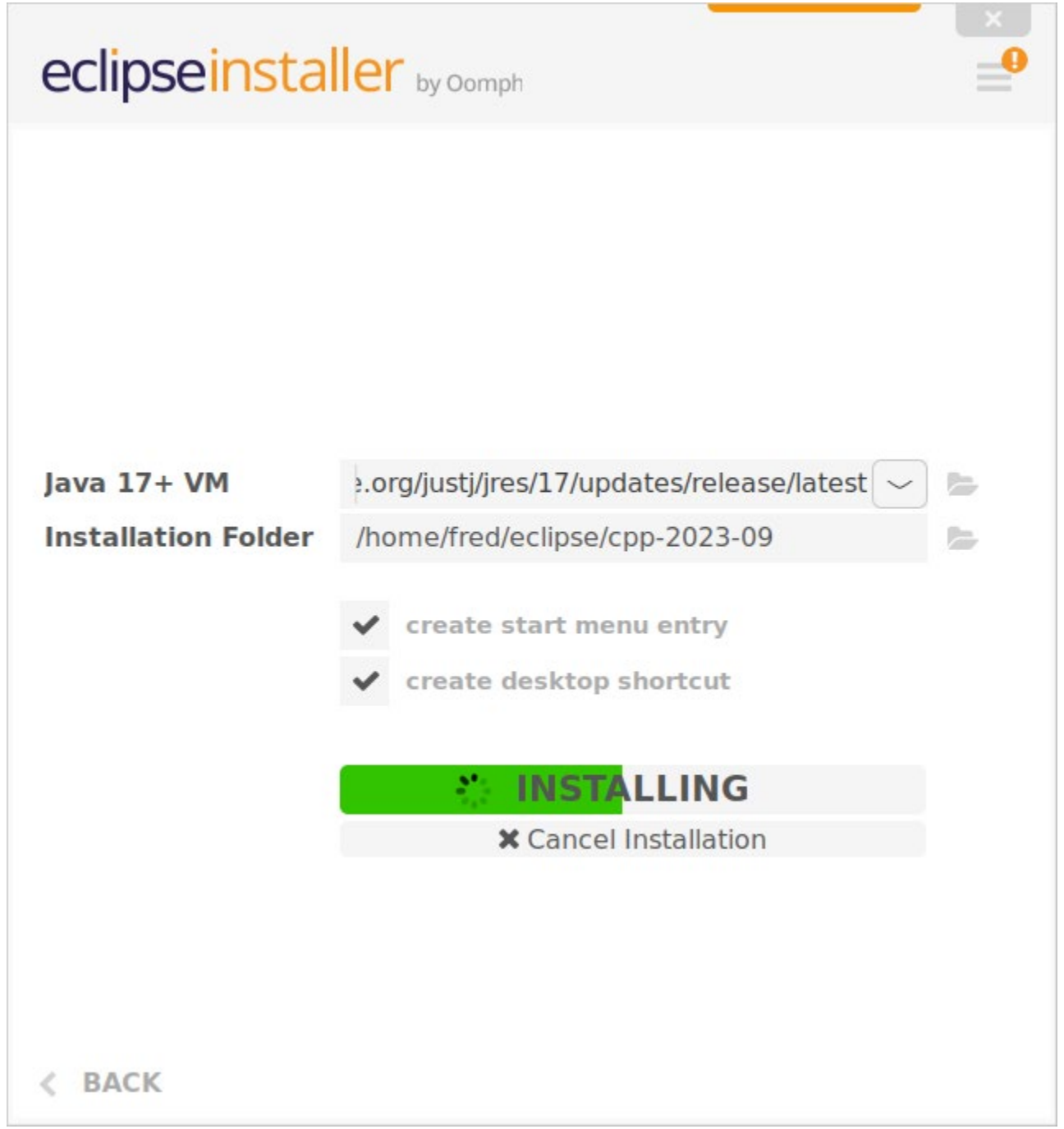
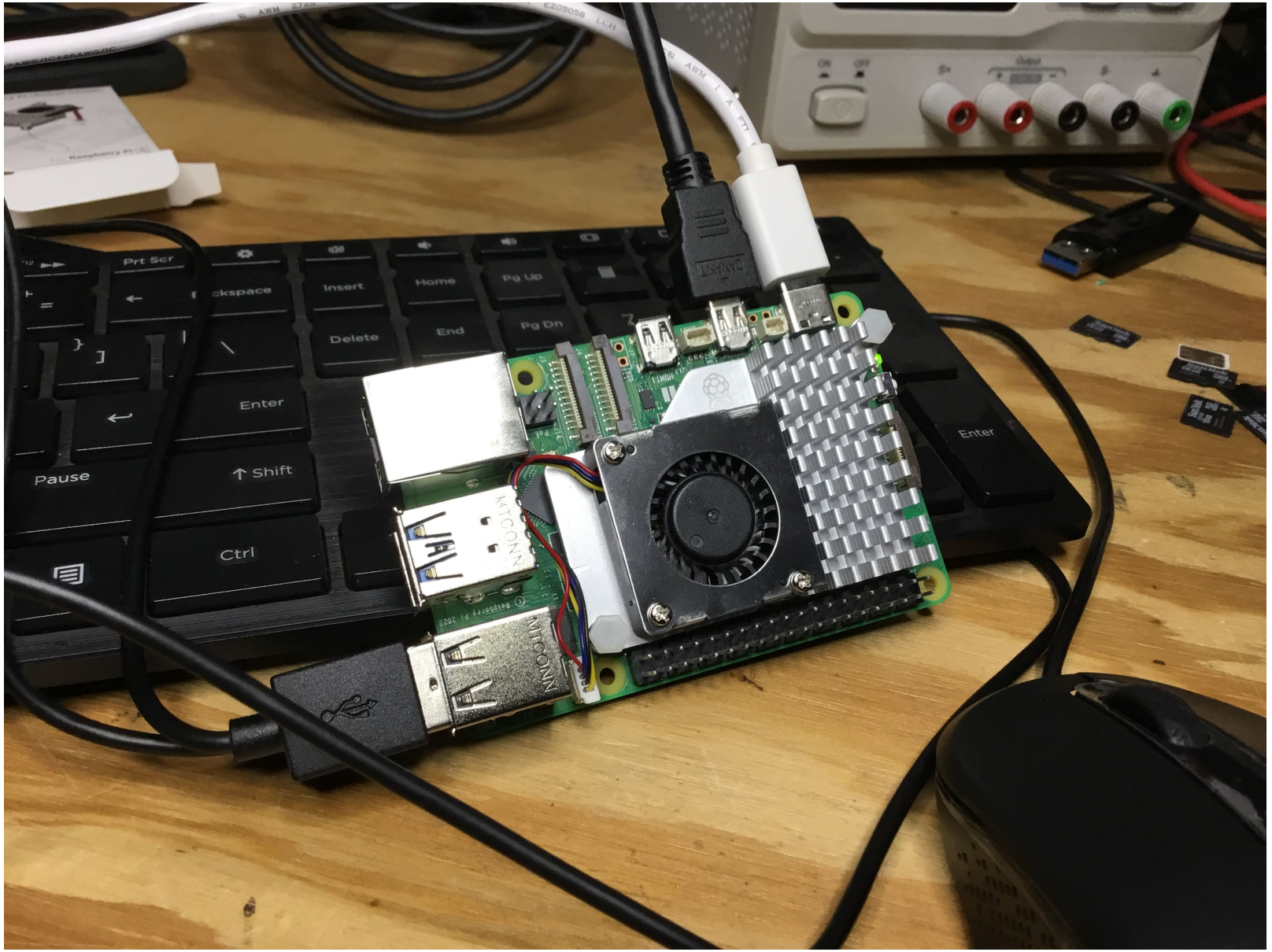
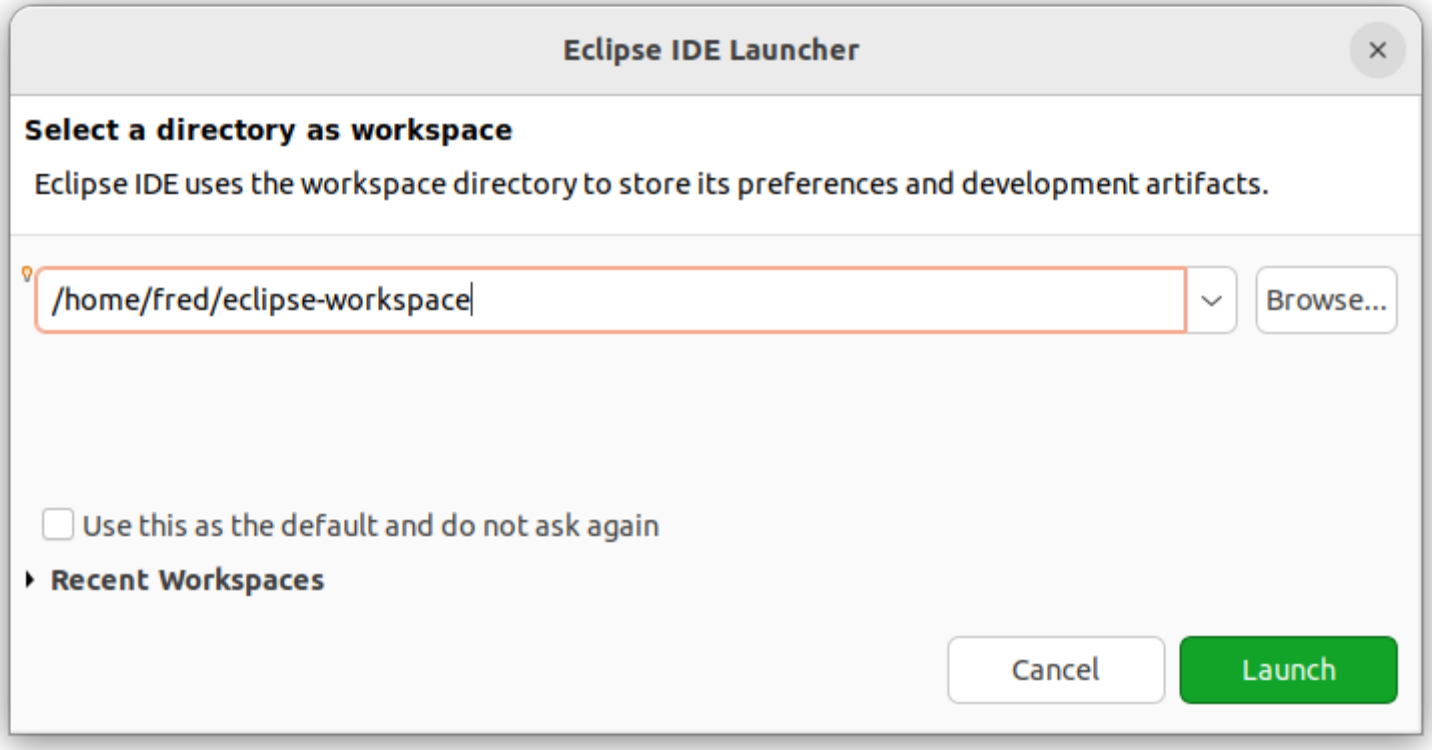
eclipseinstaller by Oomph
type filter text
Eclipse IDE for Java Developers
The essential tools for any Java developer, including a Java IDE, a Git client, XML Editor, Maven and Gradle integration
Eclipse IDE for Enterprise Java and Web Develo
Tools for developers working with Java and Web applications, including a Java IDE, tools for JavaScript, TypeScript, JavaServer...
Eclipse IDE for C/C++ Developers
An IDE for C/C++ developers.
Eclipse IDE for Embedded C/C++ Developers
An IDE for Embedded C/C++ developers. It includes managed cross build plug-ins (Arm and RISC-V) and debug plug-ins...
Eclipse IDE for PHP Developers
The essential tools for any PHP developer, including PHP language support, Git client and editors for JavaScript,...
Install This One

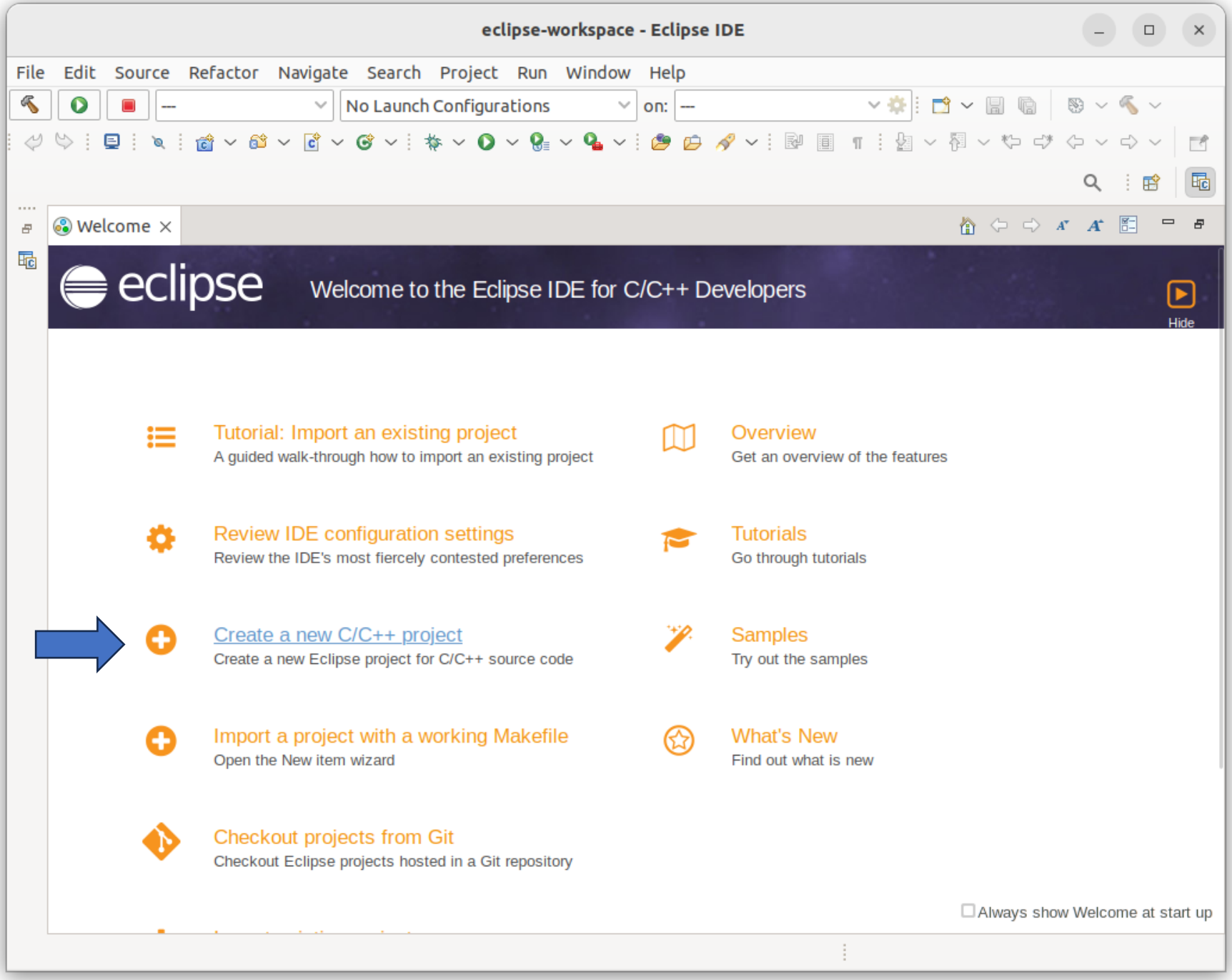

eclipseinstaller by Oomph
Java 17+ VM
.org/justj/jres/17/updates/release/latest
Installation Folder
/home/fred/eclipse/cpp-2023-09
create start menu entry
create desktop shortcut
INSTALLING
Cancel Installation
BACK

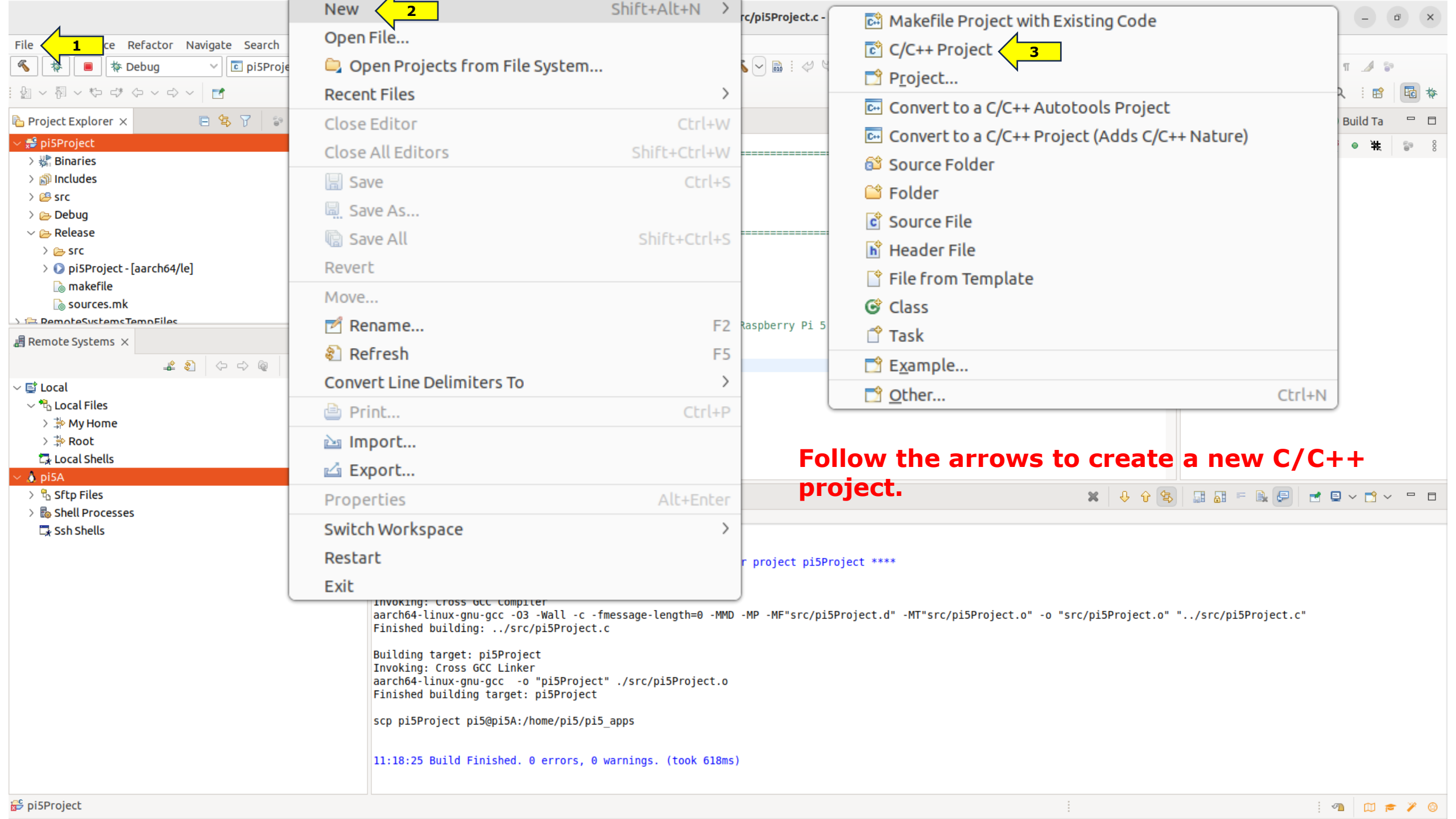
Launch Eclipse and Create a New Project

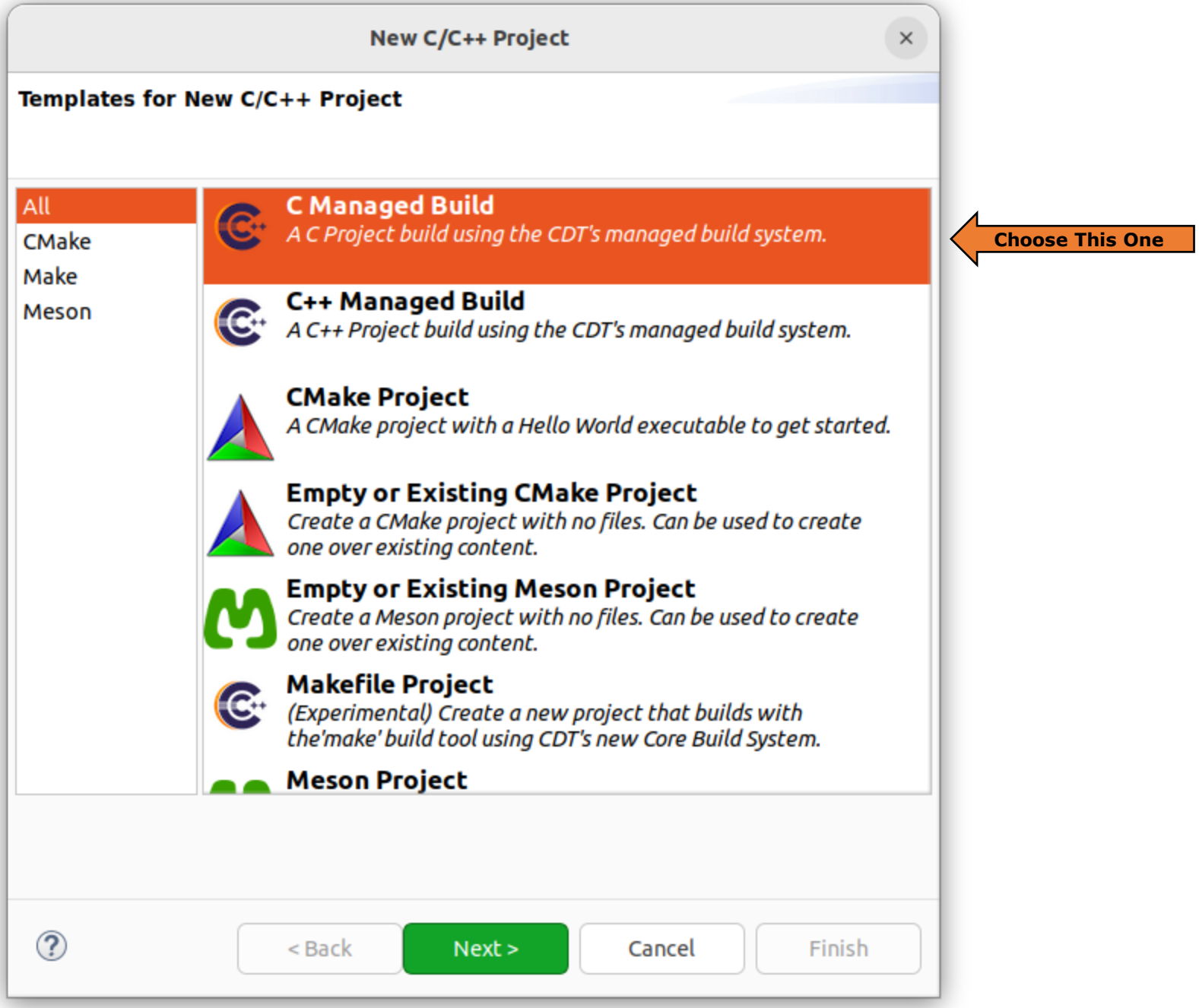


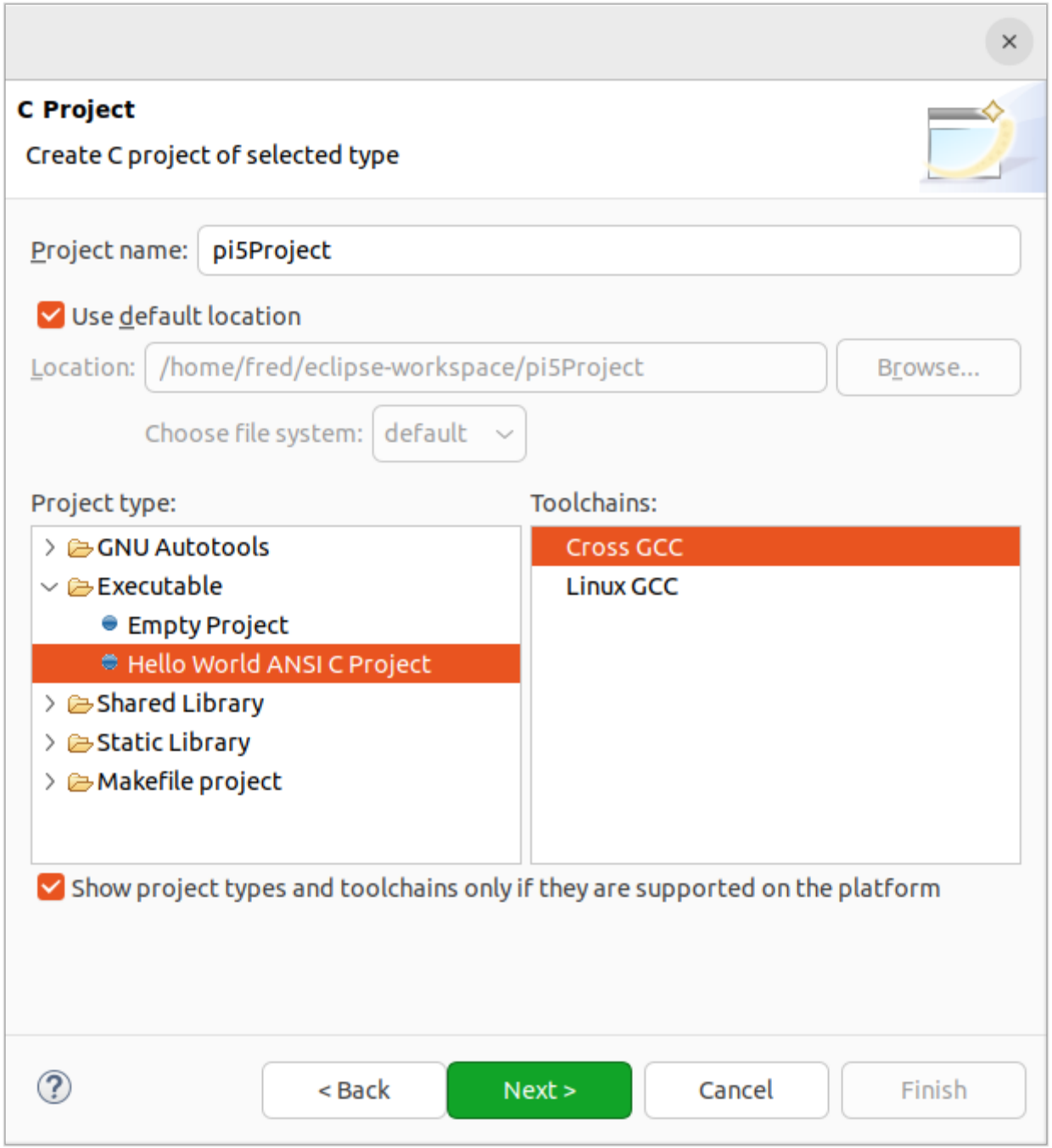
I suggest taking the default workspace.




eclipse-workspace - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
No Launch Configurations
on:
Welcome
eclipse
Welcome to the Eclipse IDE for C/C++ Developers
Hide
Tutorial: Import an existing project
A guided walk-through how to import an existing project
Overview
Get an overview of the features
Review IDE configuration settings
Review the IDE's most fiercely contested preferences
Tutorials
Go through tutorials
Create a new C/C++ project
Create a new Eclipse project for C/C++ source code
Samples
Try out the samples
Import a project with a working Makefile
Open the New item wizard
What's New
Find out what is new
Checkout projects from Git
Checkout Eclipse projects hosted in a Git repository
Always show Welcome at start up


File
Refactor
Navigate
Search
Debug
Project Explorer
pi5Project
Binaries
Includes
src
Debug
Release
src
pi5Project - [aarch64/le]
makefile
sources.mk
Remote Systems
Local
Local Files
My Home
Root
Local Shells
pi5A
Sftp Files
Shell Processes
Ssh Shells
New Shift+Alt+N
Open File...
Open Projects from File System...
Recent Files
Close Editor Ctrl+W
Close All Editors Shift+Ctrl+W
Save Ctrl+S
Save As...
Save All Shift+Ctrl+S
Revert
Move...
Rename... F2
Refresh F5
Convert Line Delimiters To
Print... Ctrl+P
Import...
Export...
Properties Alt+Enter
Switch Workspace
Restart
Exit
Makefile Project with Existing Code
C/C++ Project
Project...
Convert to a C/C++ Autotools Project
Convert to a C/C++ Project (Adds C/C++ Nature)
Source Folder
Folder
Source File
Header File
File from Template
Class
Task
Example...
Other... Ctrl+N
1
2
3
Follow the arrows to create a new C/C++ project.
aarch64-linux-gnu-gcc -O3 -Wall -c -fmessage-length=0 -MMD -MP -MF"src/pi5Project.d" -MT"src/pi5Project.o" -o "src/pi5Project.o" "../src/pi5Project.c"
Finished building: ../src/pi5Project.c
Building target: pi5Project
Invoking: Cross GCC Linker
aarch64-linux-gnu-gcc -o "pi5Project" ./src/pi5Project.o
Finished building target: pi5Project
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
11:18:25 Build Finished. 0 errors, 0 warnings. (took 618ms)
pi5Project


New C/C++ Project
Templates for New C/C++ Project
All
CMake
Make
Meson
C Managed Build
A C Project build using the CDT's managed build system.
C++ Managed Build
A C++ Project build using the CDT's managed build system.
CMake Project
A CMake project with a Hello World executable to get started.
Empty or Existing CMake Project
Create a CMake project with no files. Can be used to create one over existing content.
Empty or Existing Meson Project
Create a Meson project with no files. Can be used to create one over existing content.
Makefile Project
(Experimental) Create a new project that builds with the'make' build tool using CDT's new Core Build System.
Meson Project
Choose This One
< Back
Next >
Cancel
Finish

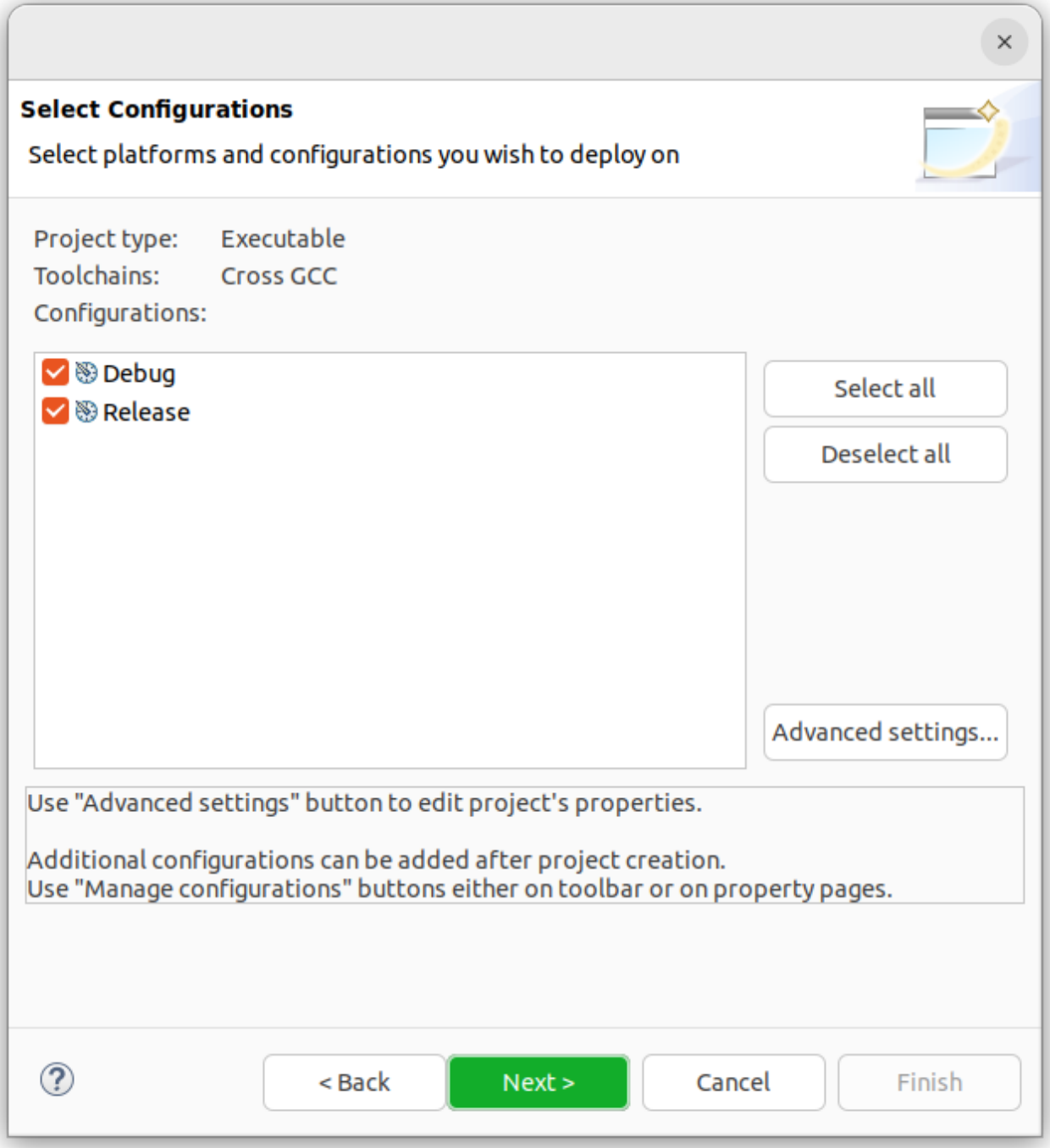

C Project
Create C project of selected type
Project name: pi5Project
Use default location
Location: /home/fred/eclipse-workspace/pi5Project
Browse...
Choose file system: default
Project type:
GNU Autotools
Executable
Empty Project
Hello World ANSI C Project
Shared Library
Static Library
Makefile project
Toolchains:
Cross GCC
Linux GCC
Show project types and toolchains only if they are supported on the platform
< Back
Next >
Cancel
Finish

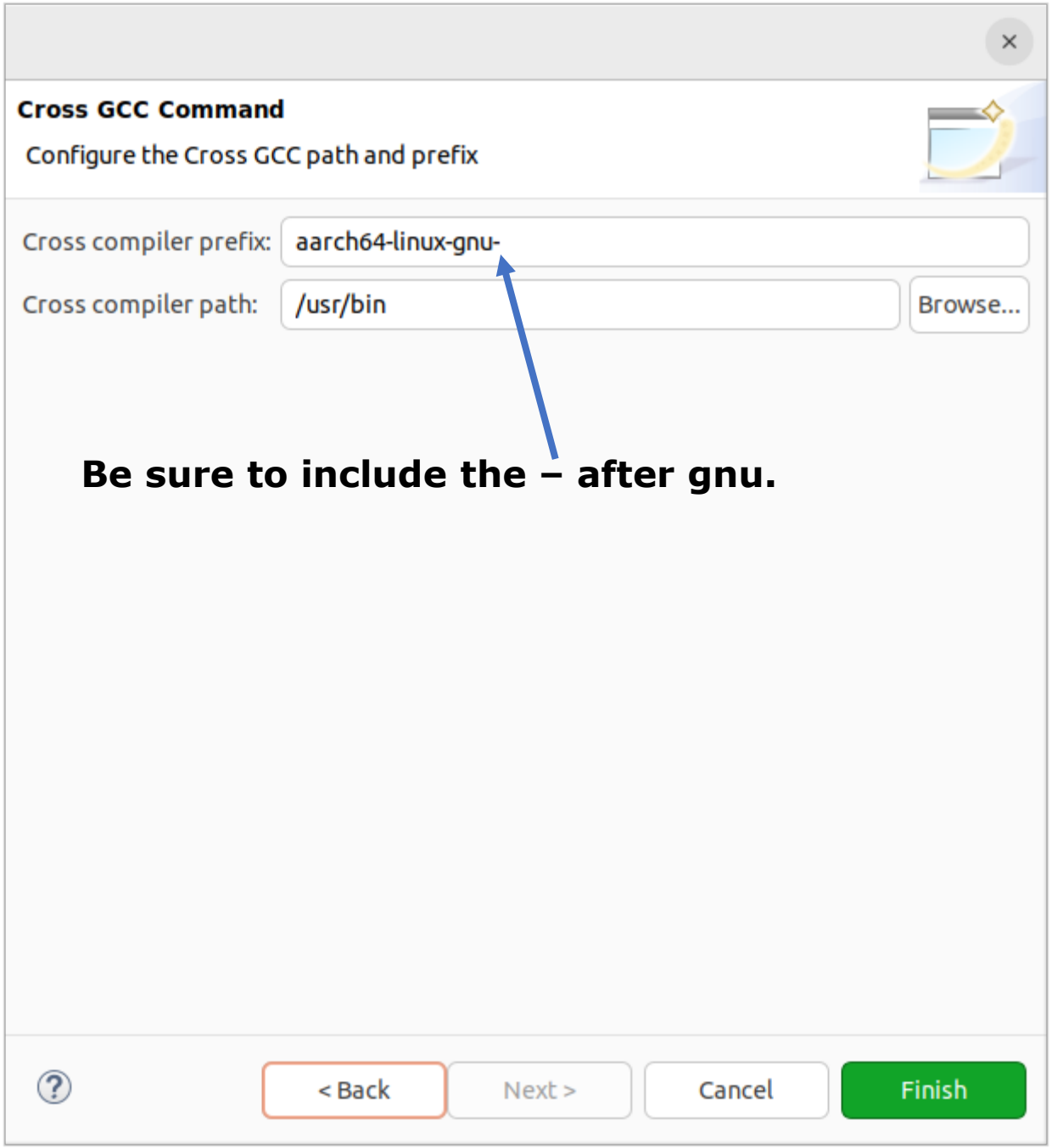
Basic Settings

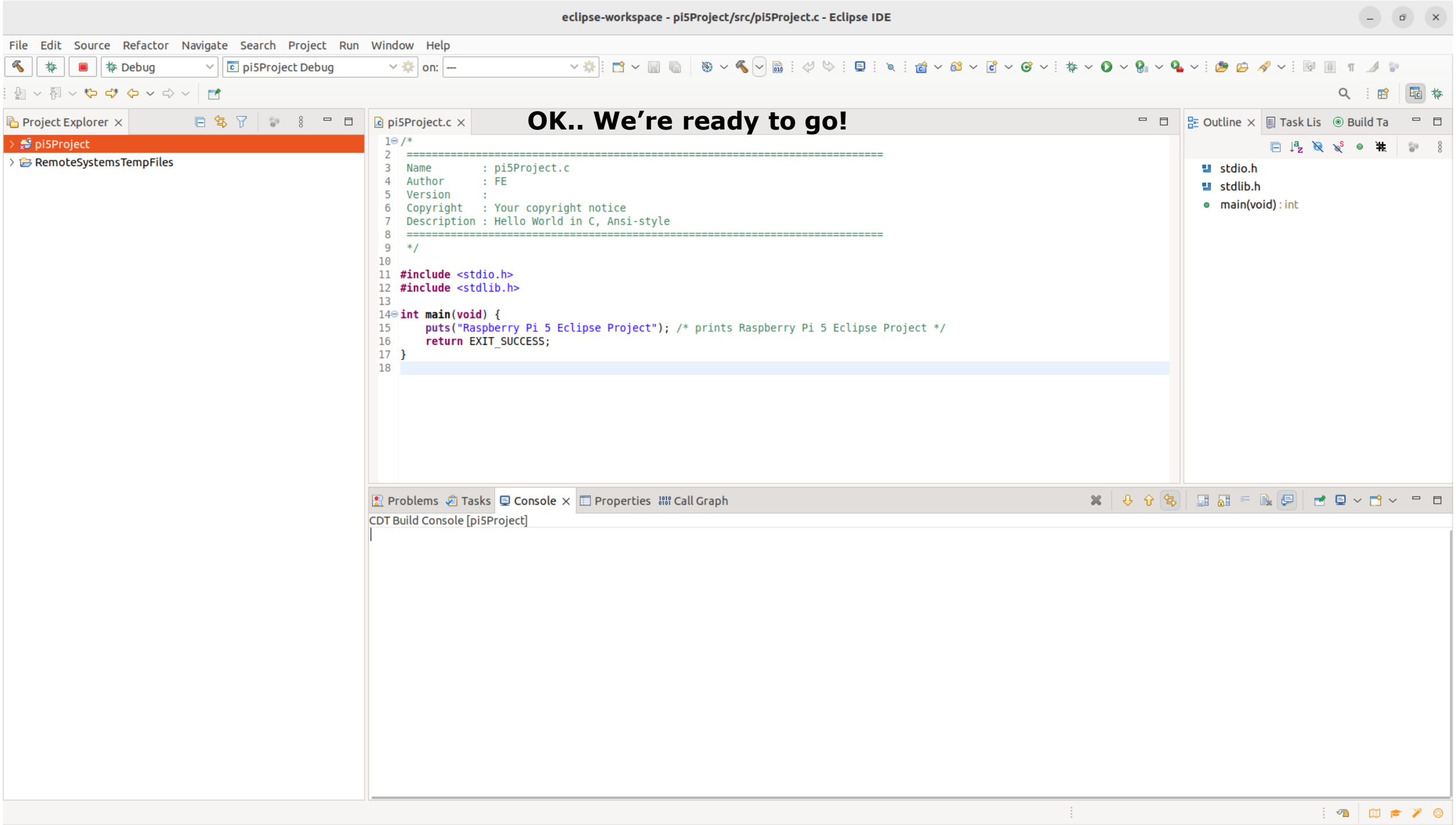
Basic properties of a project

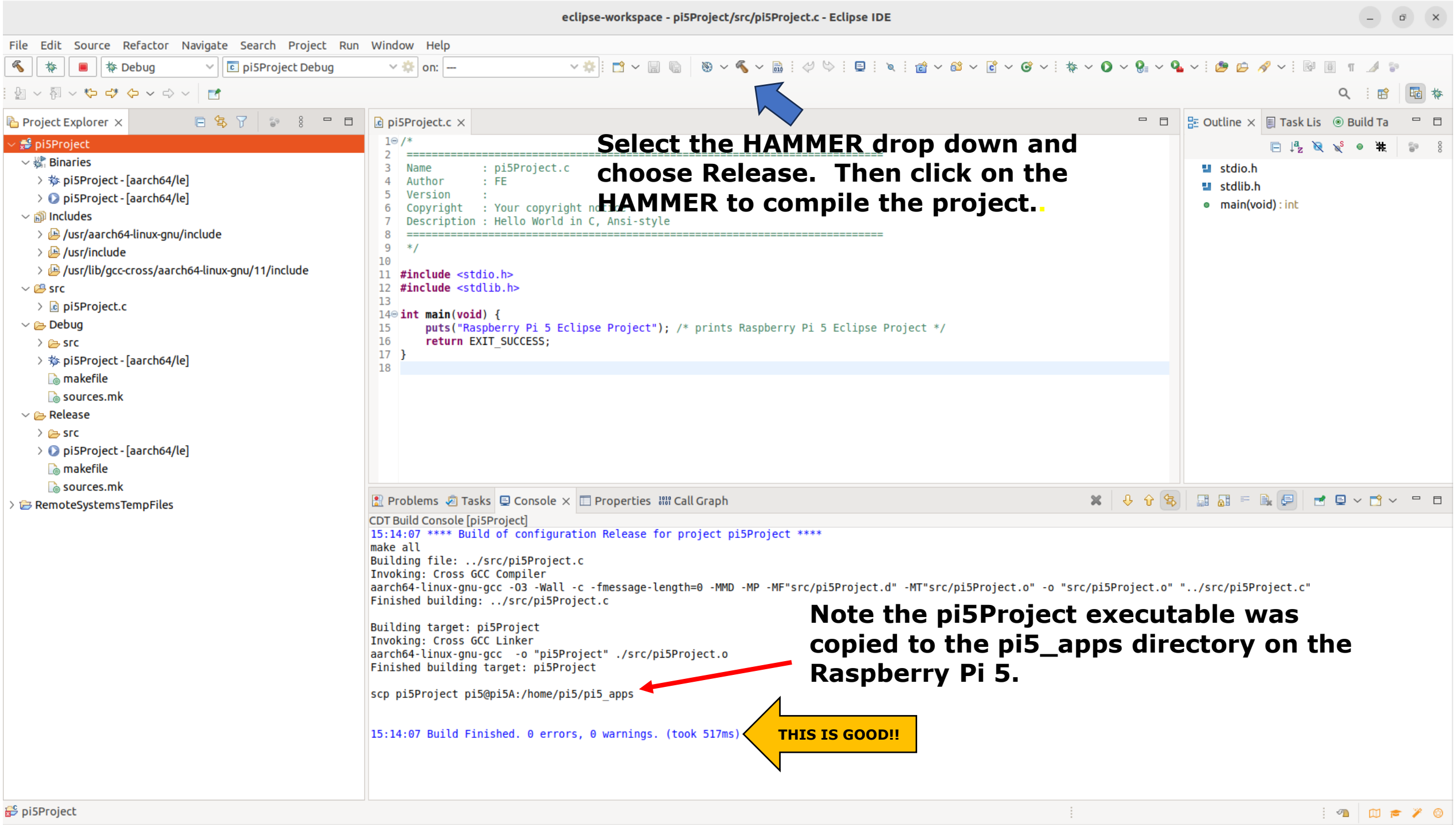
Author	FE
Copyright notice	Your copyright notice
Hello world greeting	Raspberry Pi 5 Eclipse Project
Source	src

< Back | Next > | Cancel | Finish

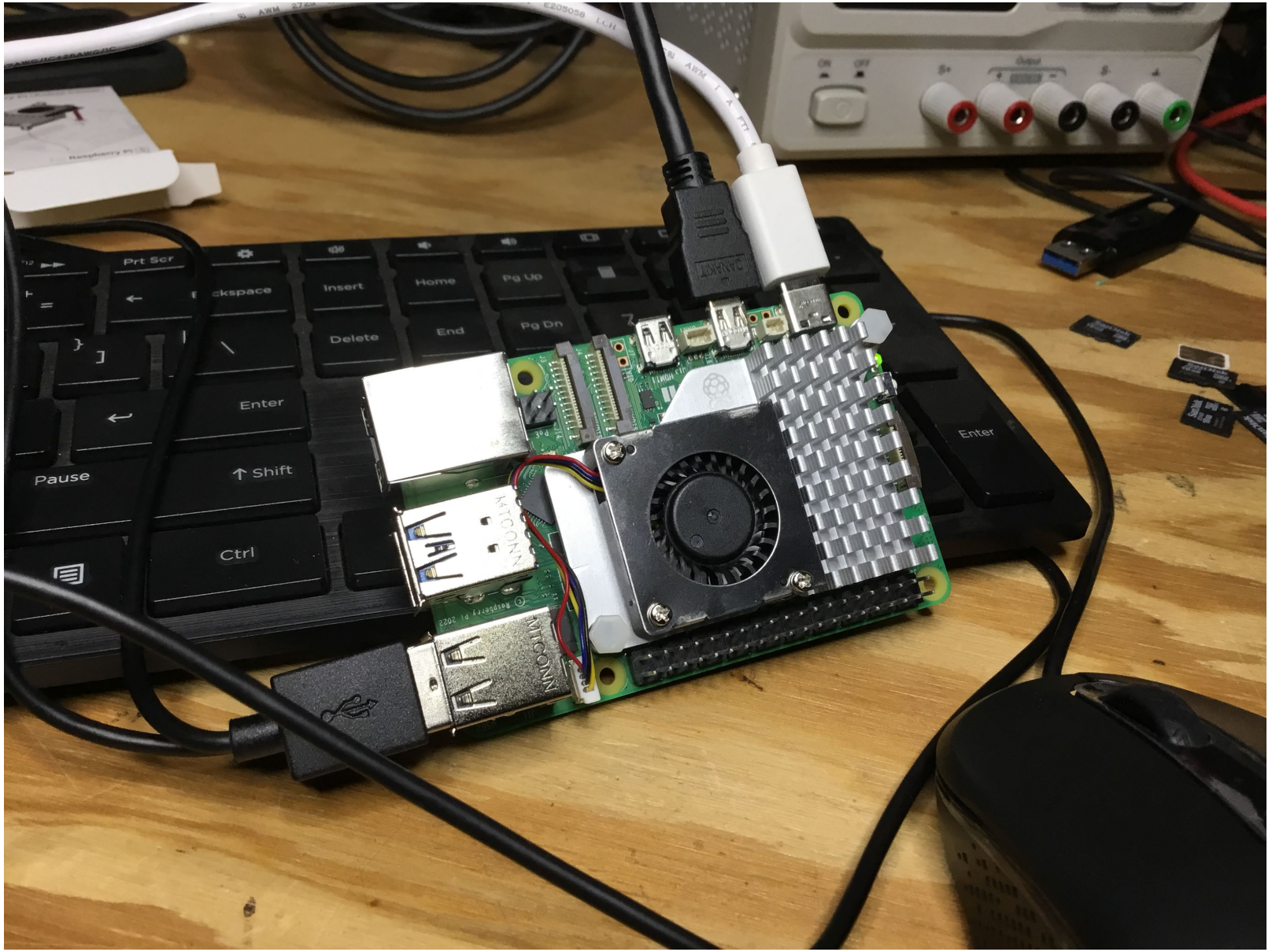

Select Configurations
Select platforms and configurations you wish to deploy on
Project type: Executable
Toolchains: Cross GCC
Configurations:
Debug
Release
Select all
Deselect all
Advanced settings...
Use "Advanced settings" button to edit project's properties.
Additional configurations can be added after project creation.
Use "Manage configurations" buttons either on toolbar or on property pages.
< Back
Next >
Cancel
Finish

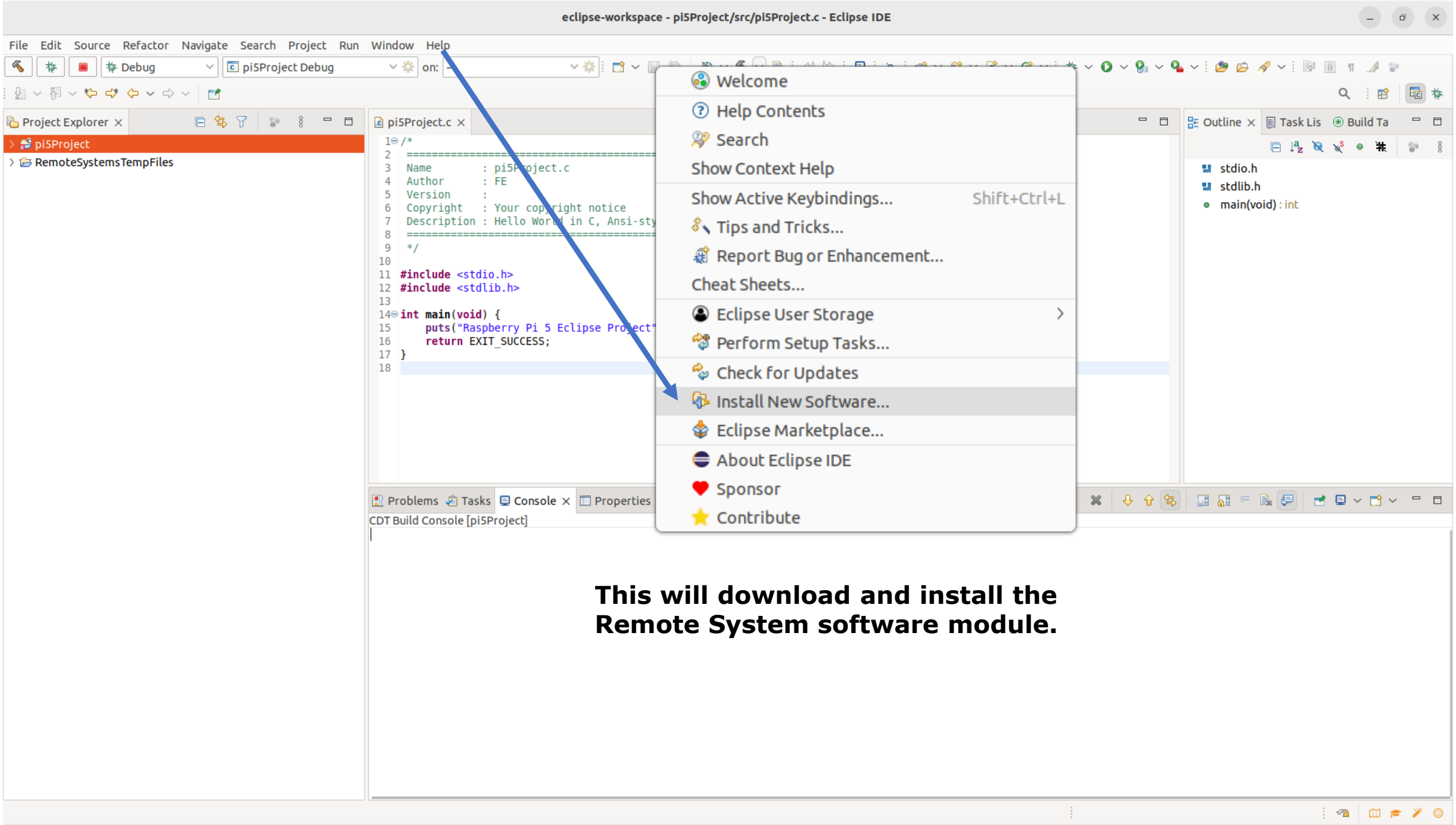

Cross GCC Command
Configure the Cross GCC path and prefix
Cross compiler prefix:
aarch64-linux-gnu-
Cross compiler path:
/usr/bin
Browse...
Be sure to include the – after gnu.
< Back
Next >
Cancel
Finish

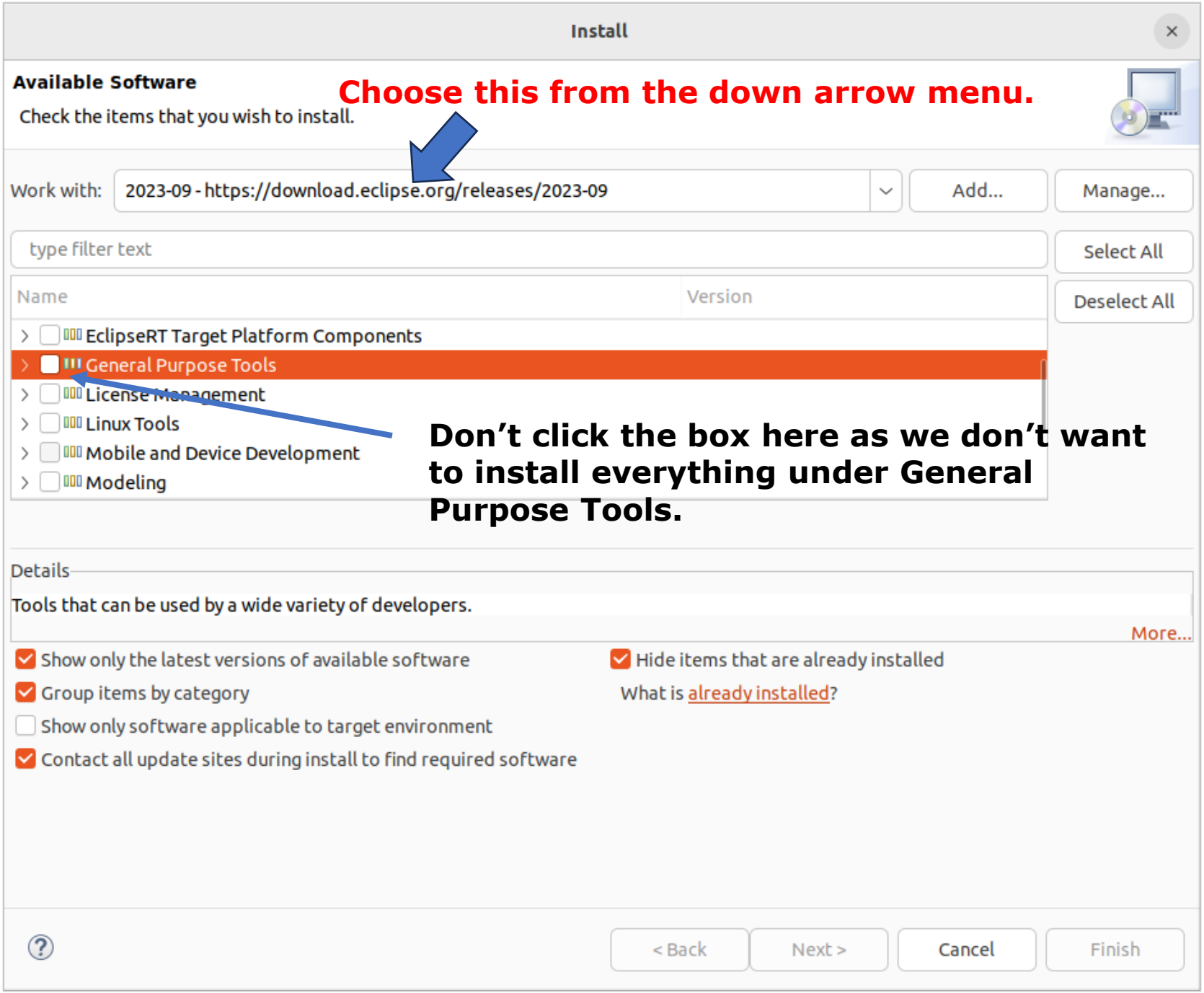

eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
on:
Project Explorer
pi5Project
RemoteSystemsTempFiles
pi5Project.c
OK.. We're ready to go!
/*
Name : pi5Project.c
Author : FE
Version :
Copyright : Your copyright notice
Description : Hello World in C, Ansi-style
*/
#include <stdio.h>
#include <stdlib.h>
int main(void) {
puts("Raspberry Pi 5 Eclipse Project"); /* prints Raspberry Pi 5 Eclipse Project */
return EXIT_SUCCESS;
}
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
Problems
Tasks
Console
Properties
Call Graph
CDT Build Console [pi5Project]

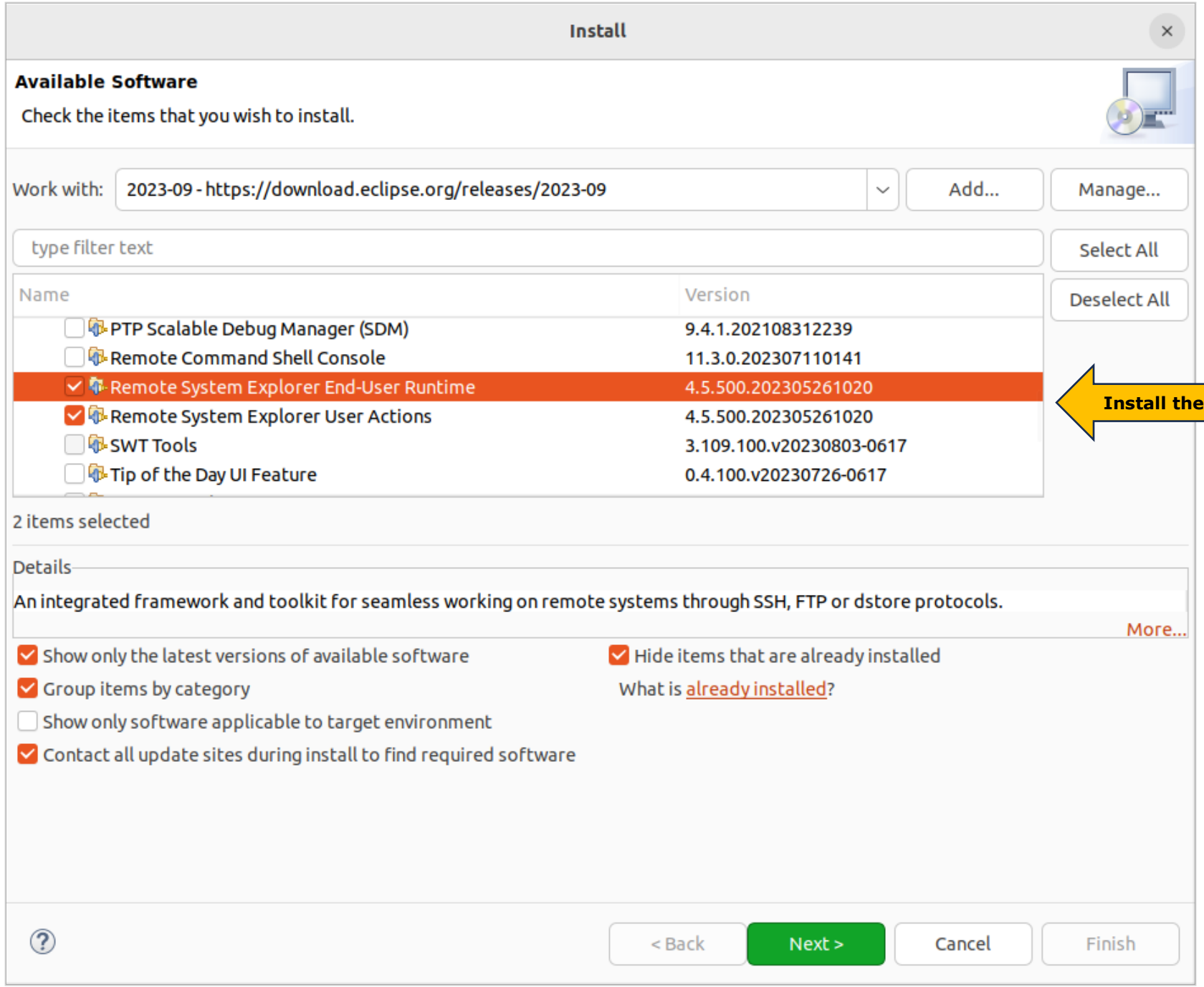

eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
on:
Project Explorer
pi5Project
Binaries
pi5Project - [aarch64/le]
pi5Project - [aarch64/le]
Includes
/usr/aarch64-linux-gnu/include
/usr/include
/usr/lib/gcc-cross/aarch64-linux-gnu/11/include
src
pi5Project.c
Debug
src
pi5Project - [aarch64/le]
makefile
sources.mk
Release
src
pi5Project - [aarch64/le]
makefile
sources.mk
RemoteSystemsTempFiles
pi5Project.c
/*
Name : pi5Project.c
Author : FE
Version :
Copyright : Your copyright notice
Description : Hello World in C, Ansi-style
*/
#include <stdio.h>
#include <stdlib.h>
int main(void) {
puts("Raspberry Pi 5 Eclipse Project"); /* prints Raspberry Pi 5 Eclipse Project */
return EXIT_SUCCESS;
}
Select the HAMMER drop down and choose Release. Then click on the HAMMER to compile the project.
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
Problems
Tasks
Console
Properties
Call Graph
CDT Build Console [pi5Project]
15:14:07 **** Build of configuration Release for project pi5Project ****
make all
Building file: ../src/pi5Project.c
Invoking: Cross GCC Compiler
aarch64-linux-gnu-gcc -O3 -Wall -c -fmessage-length=0 -MMD -MP -MF"src/pi5Project.d" -MT"src/pi5Project.o" -o "src/pi5Project.o" "../src/pi5Project.c"
Finished building: ../src/pi5Project.c
Building target: pi5Project
Invoking: Cross GCC Linker
aarch64-linux-gnu-gcc -o "pi5Project" ./src/pi5Project.o
Finished building target: pi5Project
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
15:14:07 Build Finished. 0 errors, 0 warnings. (took 517ms)
Note the pi5Project executable was copied to the pi5_apps directory on the Raspberry Pi 5.
THIS IS GOOD!!
pi5Project

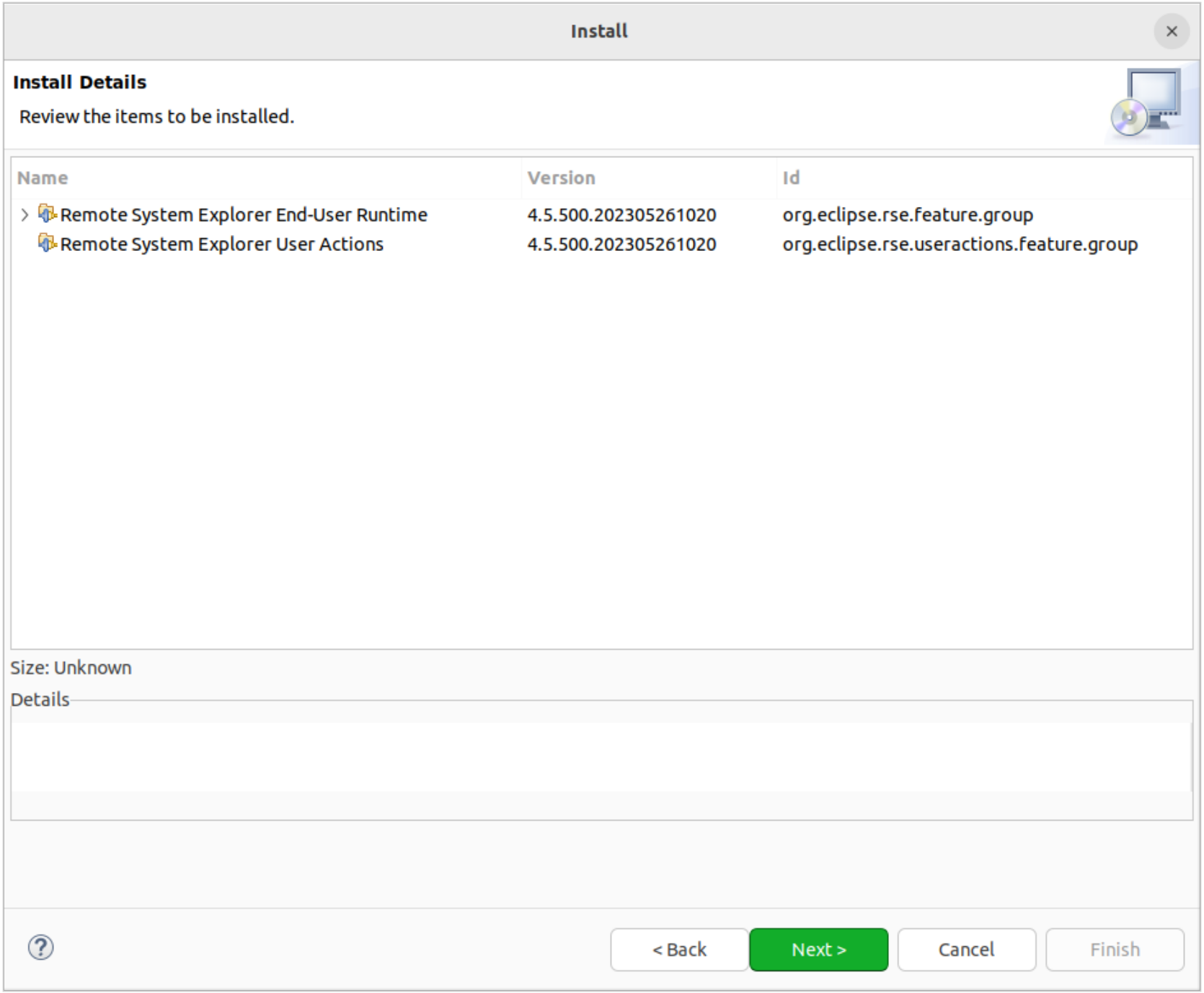
Download and Install the Remote Systems Software Module




eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
on:
Project Explorer
pi5Project
RemoteSystemsTempFiles
pi5Project.c
1 /*
2 ==
3 Name : pi5Project.c
4 Author : FE
5 Version :
6 Copyright : Your copyright notice
7 Description : Hello World in C, Ansi-sty
8 ==
9 */
10
11 #include <stdio.h>
12 #include <stdlib.h>
13
14 int main(void) {
15 puts("Raspberry Pi 5 Eclipse Project"
16 return EXIT_SUCCESS;
17 }
18
Welcome
Help Contents
Search
Show Context Help
Show Active Keybindings... Shift+Ctrl+L
Tips and Tricks...
Report Bug or Enhancement...
Cheat Sheets...
Eclipse User Storage
Perform Setup Tasks...
Check for Updates
Install New Software...
Eclipse Marketplace...
About Eclipse IDE
Sponsor
Contribute
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
Problems
Tasks
Console
Properties
CDT Build Console [pi5Project]
This will download and install the
Remote System software module.


Install
Available Software
Check the items that you wish to install.
Choose this from the down arrow menu.
Work with:
2023-09 - https://download.eclipse.org/releases/2023-09
Add...
Manage...
type filter text
Select All
Deselect All
Name
Version
EclipseRT Target Platform Components
General Purpose Tools
License Management
Linux Tools
Mobile and Device Development
Modeling
Don’t click the box here as we don’t want to install everything under General Purpose Tools.
Details
Tools that can be used by a wide variety of developers.
More...
Show only the latest versions of available software
Hide items that are already installed
Group items by category
What is already installed?
Show only software applicable to target environment
Contact all update sites during install to find required software
< Back
Next >
Cancel
Finish


Install
Available Software
Check the items that you wish to install.
Work with:
2023-09 - https://download.eclipse.org/releases/2023-09
Add...
Manage...
type filter text
Select All
Deselect All
Name
Version
PTP Scalable Debug Manager (SDM)
9.4.1.202108312239
Remote Command Shell Console
11.3.0.202307110141
Remote System Explorer End-User Runtime
4.5.500.202305261020
Remote System Explorer User Actions
4.5.500.202305261020
SWT Tools
3.109.100.v20230803-0617
Tip of the Day UI Feature
0.4.100.v20230726-0617
Install these two
2 items selected
Details
An integrated framework and toolkit for seamless working on remote systems through SSH, FTP or dstore protocols.
More...
Show only the latest versions of available software
Hide items that are already installed
Group items by category
What is already installed?
Show only software applicable to target environment
Contact all update sites during install to find required software
< Back
Next >
Cancel
Finish


Install
Install Details
Review the items to be installed.
Name
Version
Id
Remote System Explorer End-User Runtime
4.5.500.202305261020
org.eclipse.rse.feature.group
Remote System Explorer User Actions
4.5.500.202305261020
org.eclipse.rse.useractions.feature.group
Size: Unknown
Details
< Back
Next >
Cancel
Finish

Install

Review Licenses

Licenses must be reviewed and accepted before the software can be installed.

Licenses:

- Eclipse Foundation Software User Agreement

License text:

Eclipse Foundation Software User Agreement

November 22, 2017

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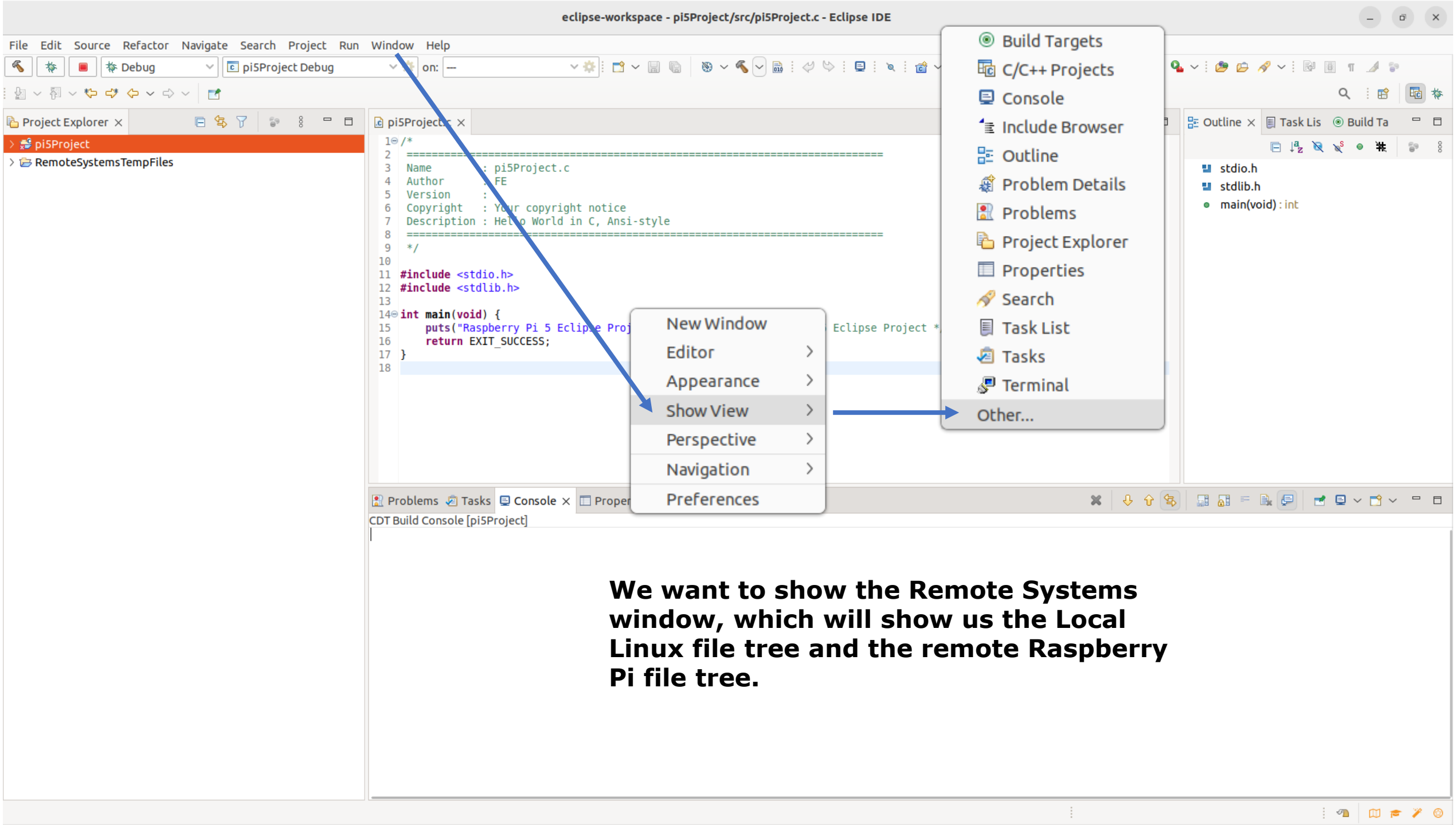
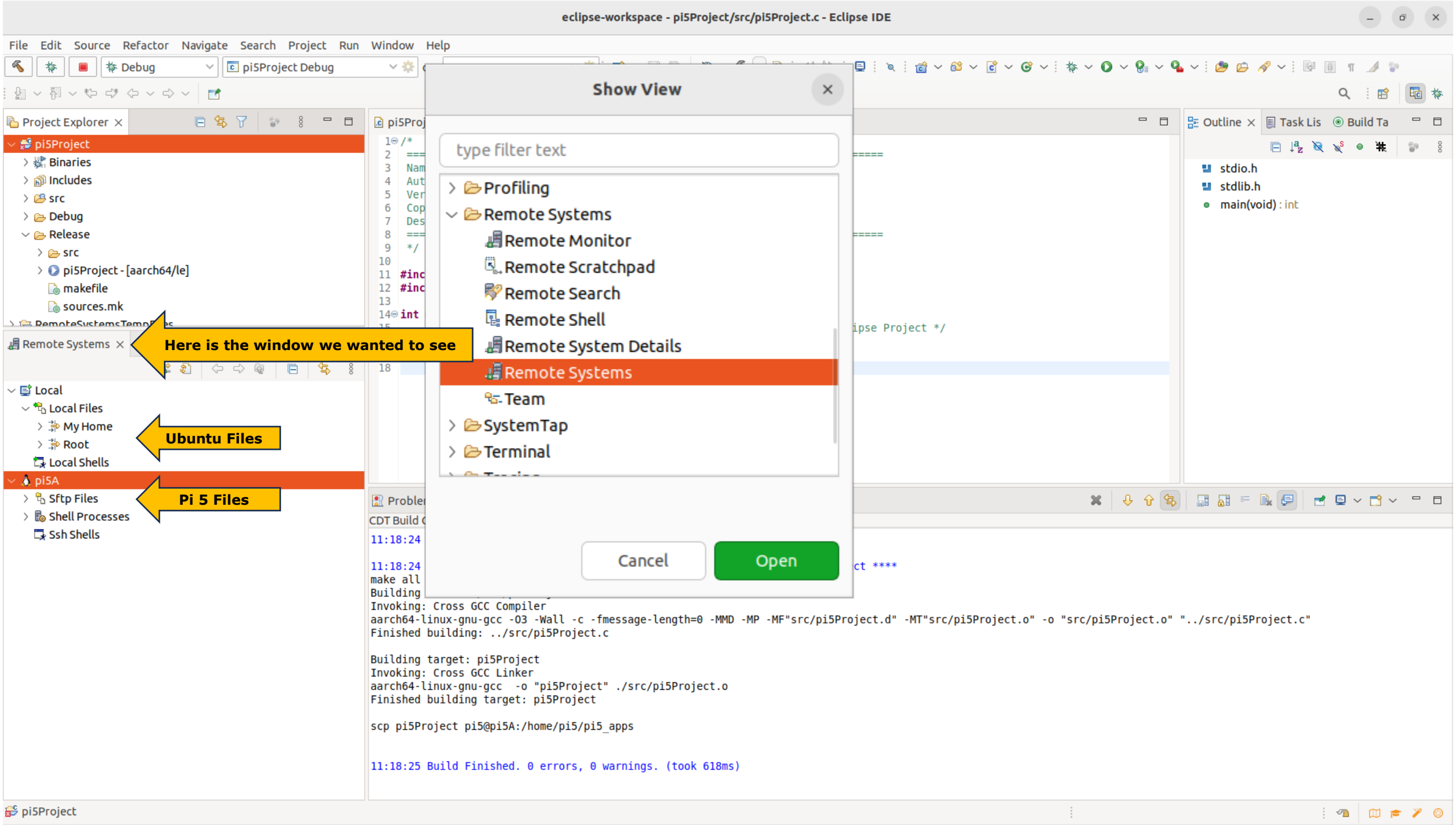
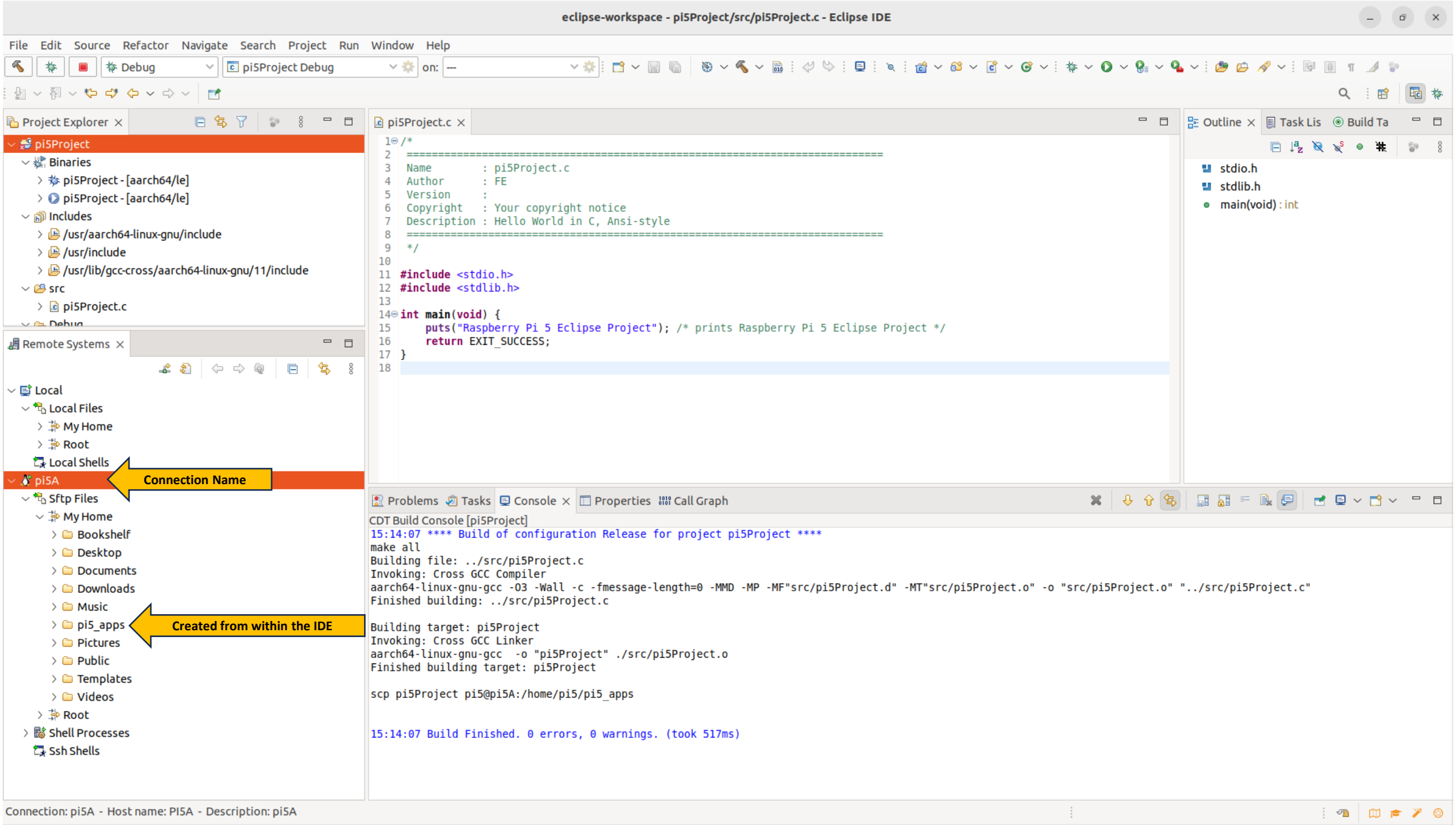
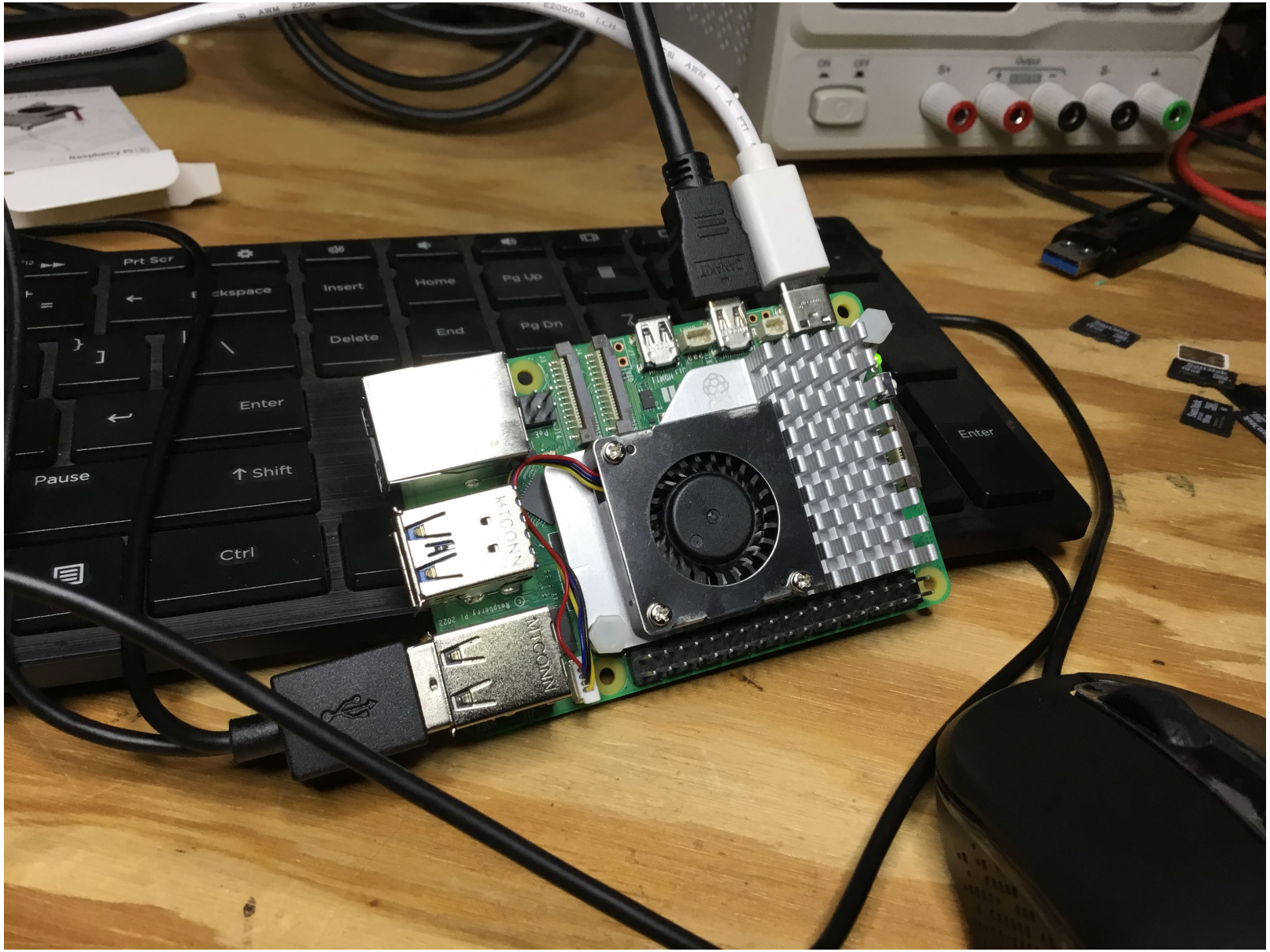
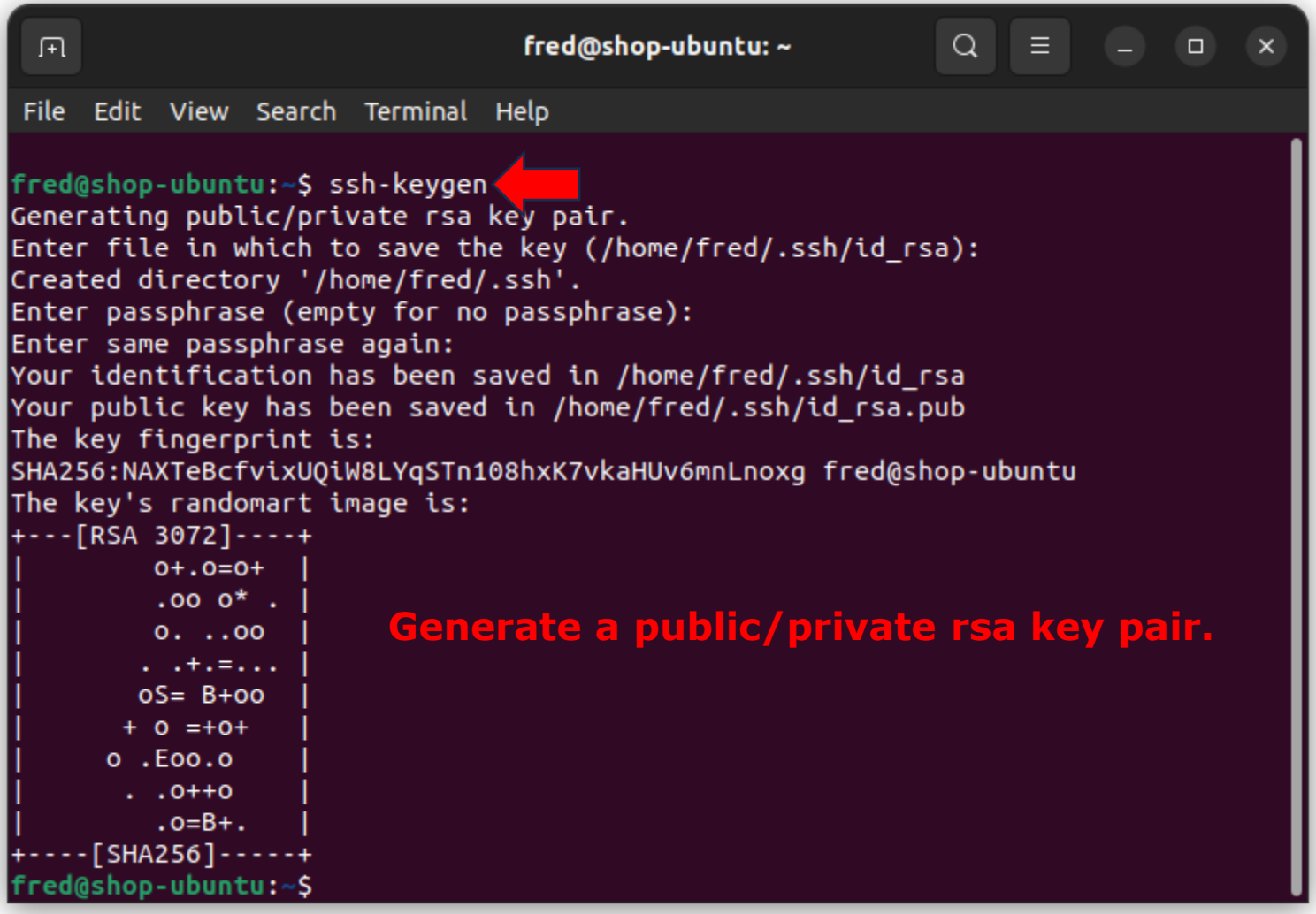

eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
on:
Project Explorer
pi5Project
RemoteSystemsTempFiles
pi5Project.c
/*
Name : pi5Project.c
Author : FE
Version :
Copyright : Your copyright notice
Description : Hello World in C, Ansi-style
*/
#include <stdio.h>
#include <stdlib.h>
int main(void) {
puts("Raspberry Pi 5 Eclipse Proj
Eclipse Project *
return EXIT_SUCCESS;
}
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
New Window
Editor
Appearance
Show View
Perspective
Navigation
Preferences
Build Targets
C/C++ Projects
Console
Include Browser
Outline
Problem Details
Problems
Project Explorer
Properties
Search
Task List
Tasks
Terminal
Other...
Problems
Tasks
Console
Proper
CDT Build Console [pi5Project]
We want to show the Remote Systems window, which will show us the Local Linux file tree and the remote Raspberry Pi file tree.

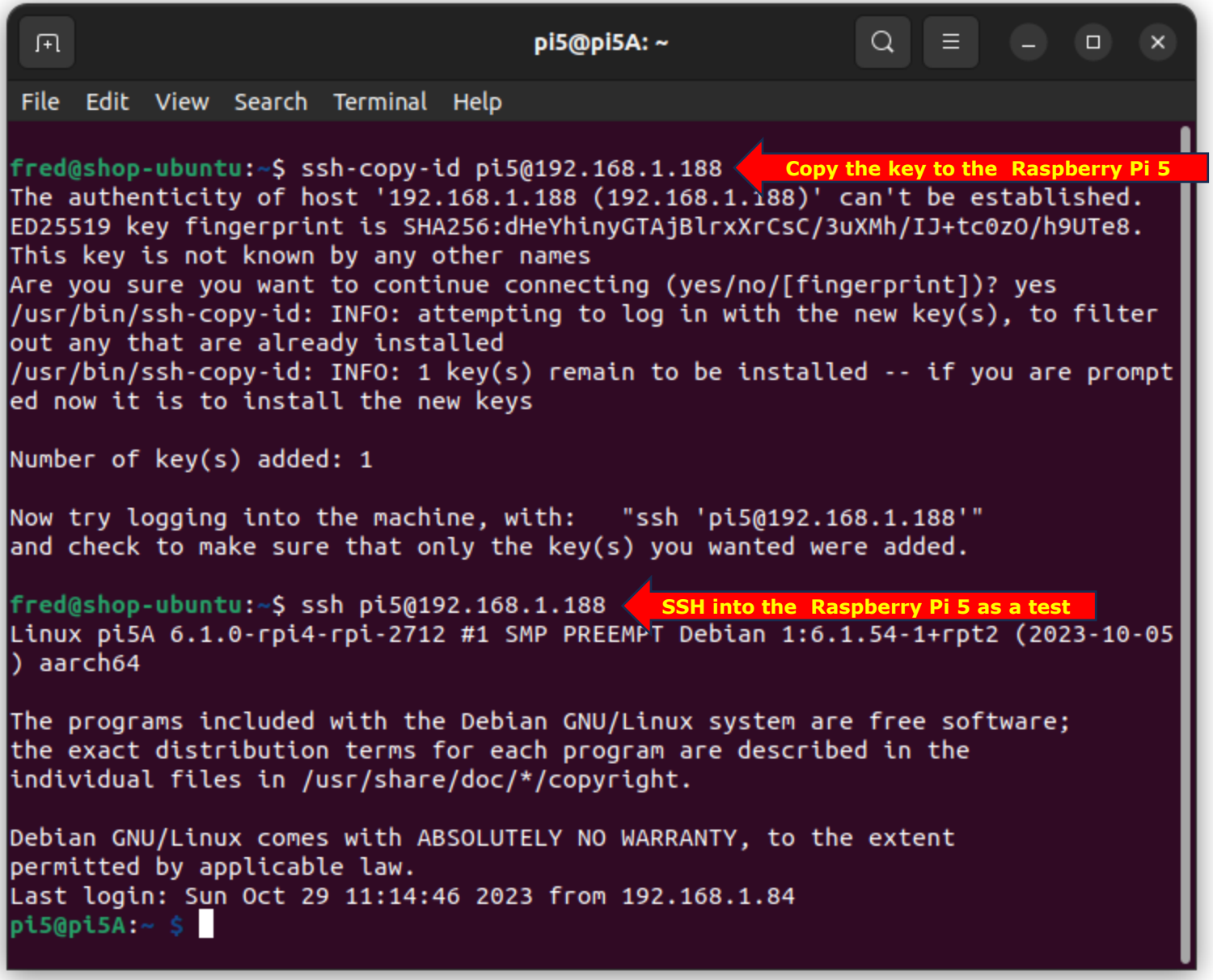

eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
Project Explorer
pi5Project
Binaries
Includes
src
Debug
Release
src
pi5Project - [aarch64/le]
makefile
sources.mk
Remote Systems
Here is the window we wanted to see
Local
Local Files
My Home
Root
Local Shells
Ubuntu Files
pi5A
Sftp Files
Shell Processes
Ssh Shells
Pi 5 Files
Show View
type filter text
Profiling
Remote Systems
Remote Monitor
Remote Scratchpad
Remote Search
Remote Shell
Remote System Details
Remote Systems
Team
SystemTap
Terminal
Cancel
Open
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
CDT Build
11:18:24
11:18:24
make all
Building
Invoking: Cross GCC Compiler
aarch64-linux-gnu-gcc -O3 -Wall -c -fmessage-length=0 -MMD -MP -MF"src/pi5Project.d" -MT"src/pi5Project.o" -o "src/pi5Project.o" "../src/pi5Project.c"
Finished building: ../src/pi5Project.c
Building target: pi5Project
Invoking: Cross GCC Linker
aarch64-linux-gnu-gcc -o "pi5Project" ./src/pi5Project.o
Finished building target: pi5Project
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
11:18:25 Build Finished. 0 errors, 0 warnings. (took 618ms)
pi5Project


eclipse-workspace - pi5Project/src/pi5Project.c - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug
pi5Project Debug
on:
Project Explorer
pi5Project
Binaries
pi5Project - [aarch64/le]
pi5Project - [aarch64/le]
Includes
/usr/aarch64-linux-gnu/include
/usr/include
/usr/lib/gcc-cross/aarch64-linux-gnu/11/include
src
pi5Project.c
Debug
Remote Systems
Local
Local Files
My Home
Root
Local Shells
pi5A
Connection Name
Sftp Files
My Home
Bookshelf
Desktop
Documents
Downloads
Music
pi5_apps
Created from within the IDE
Pictures
Public
Templates
Videos
Root
Shell Processes
Ssh Shells
pi5Project.c
/*
Name : pi5Project.c
Author : FE
Version :
Copyright : Your copyright notice
Description : Hello World in C, Ansi-style
*/
#include <stdio.h>
#include <stdlib.h>
int main(void) {
puts("Raspberry Pi 5 Eclipse Project"); /* prints Raspberry Pi 5 Eclipse Project */
return EXIT_SUCCESS;
}
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
Problems
Tasks
Console
Properties
Call Graph
CDT Build Console [pi5Project]
15:14:07 **** Build of configuration Release for project pi5Project ****
make all
Building file: ../src/pi5Project.c
Invoking: Cross GCC Compiler
aarch64-linux-gnu-gcc -O3 -Wall -c -fmessage-length=0 -MMD -MP -MF"src/pi5Project.d" -MT"src/pi5Project.o" -o "src/pi5Project.o" "../src/pi5Project.c"
Finished building: ../src/pi5Project.c
Building target: pi5Project
Invoking: Cross GCC Linker
aarch64-linux-gnu-gcc -o "pi5Project" ./src/pi5Project.o
Finished building target: pi5Project
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
15:14:07 Build Finished. 0 errors, 0 warnings. (took 517ms)
Connection: pi5A - Host name: PI5A - Description: pi5A

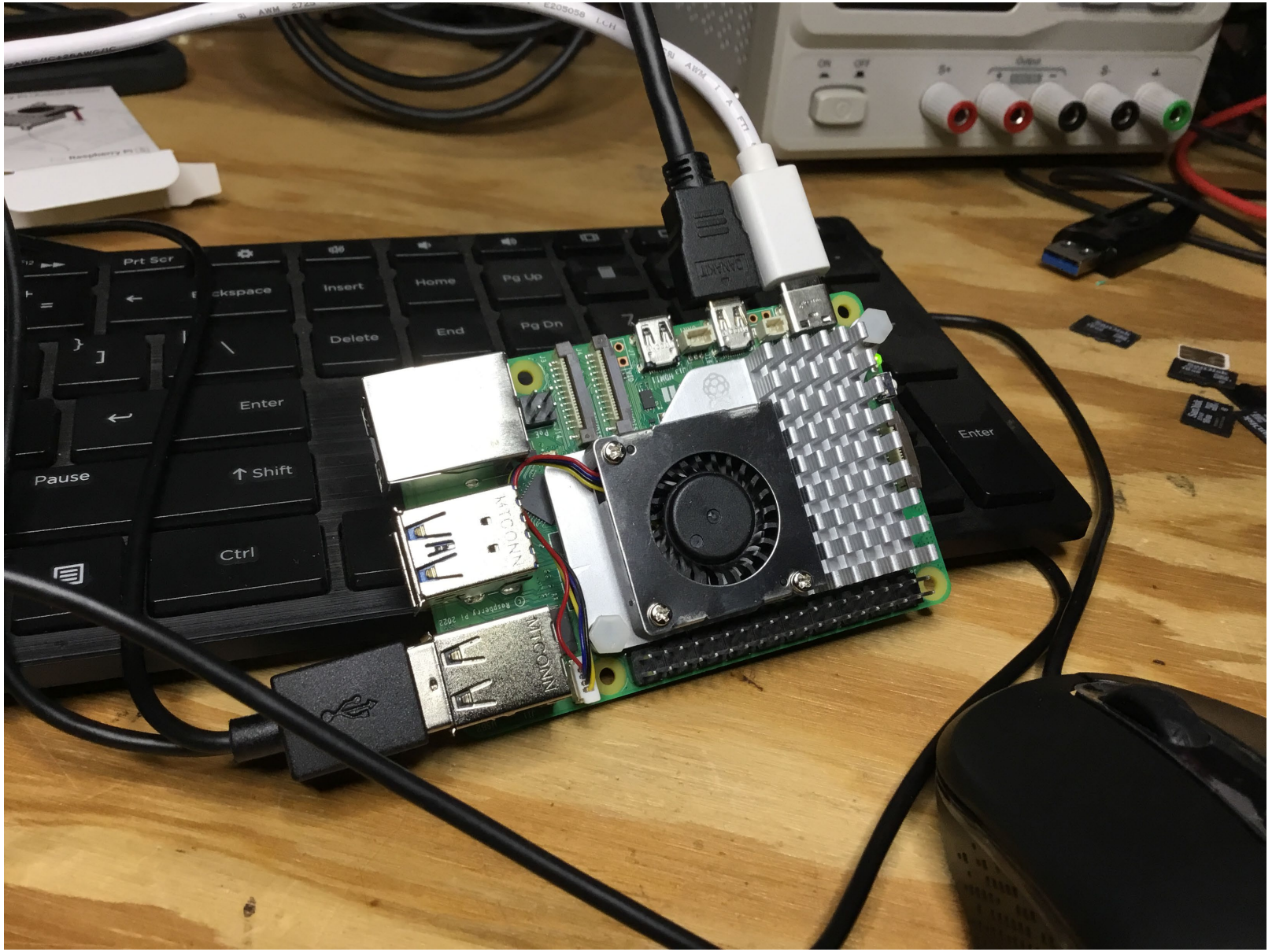
Generate Public/Private RSA Key Pair

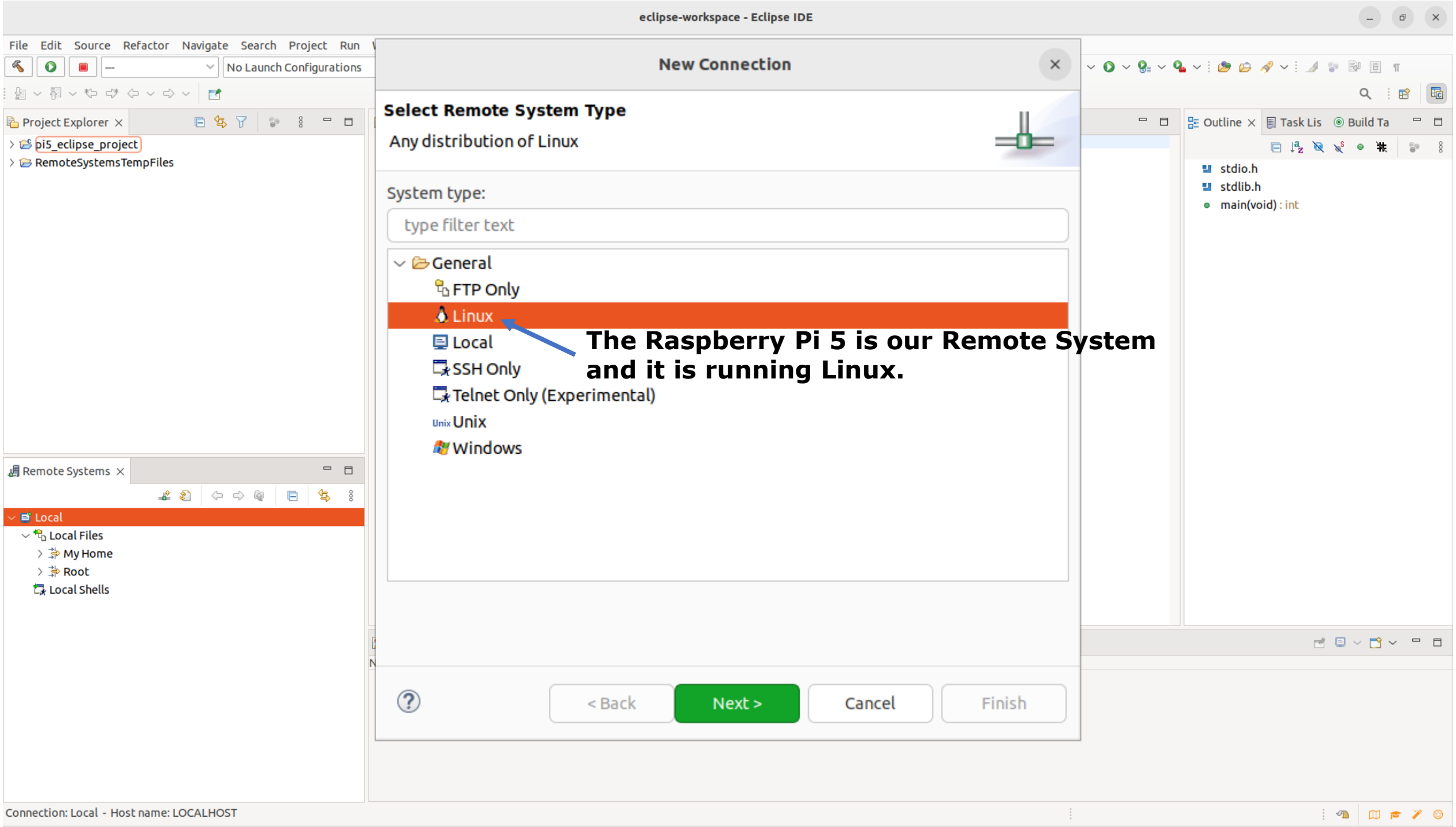


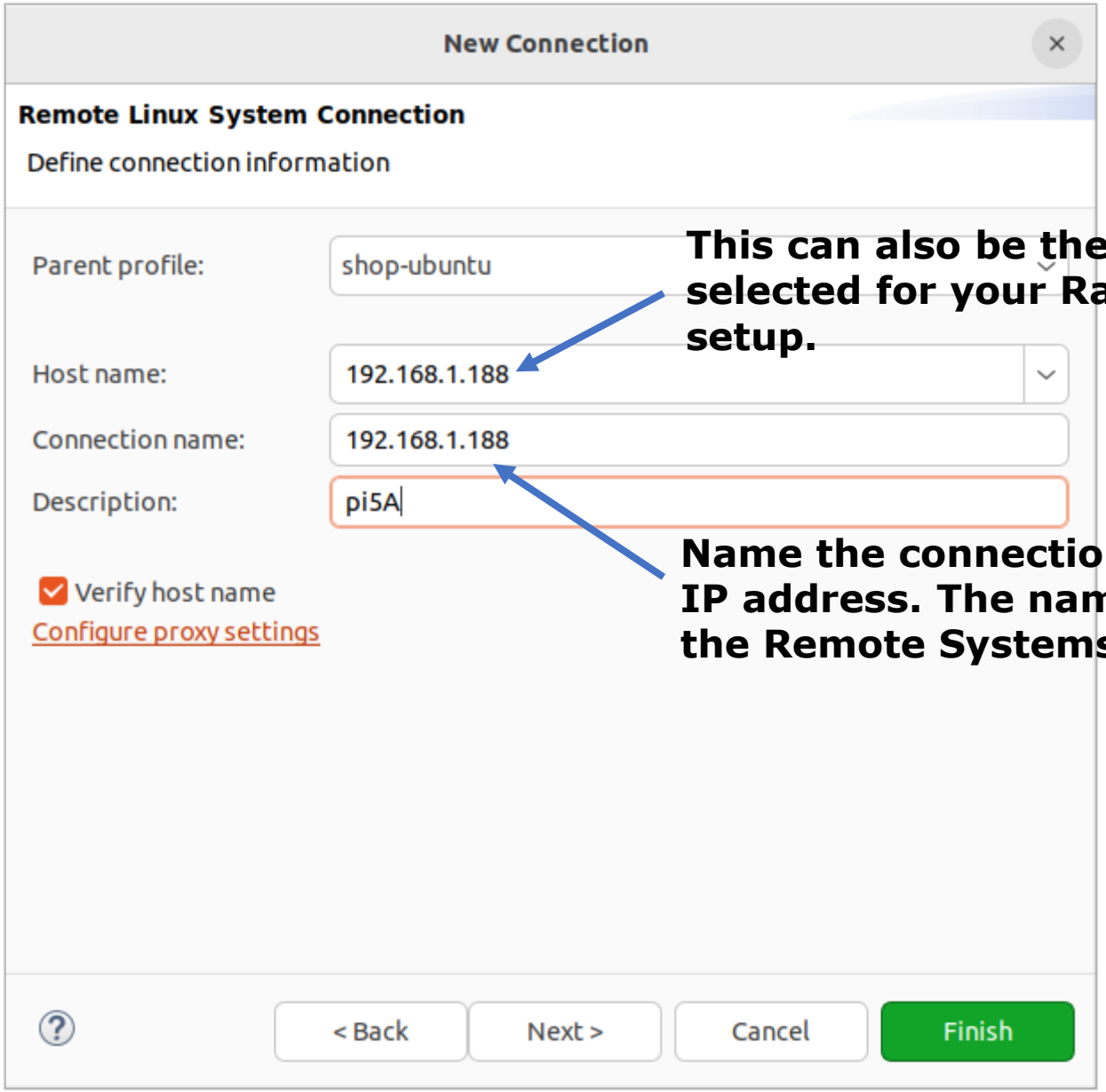

fred@shop-ubuntu: ~
File Edit View Search Terminal Help
fred@shop-ubuntu:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/fred/.ssh/id_rsa):
Created directory '/home/fred/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/fred/.ssh/id_rsa
Your public key has been saved in /home/fred/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:NAXTeBcfvixUQiW8LYqSTn108hxK7vkaHUv6mnLnoxg fred@shop-ubuntu
The key's randomart image is:
+---[RSA 3072]----+
| o+.o=o+ |
| .oo o* . |
| o. ..oo |
| . .+.=... |
| oS= B+oo |
| + o =+o+ |
| o .Eoo.o |
| . .o++o |
| .o=B+. |
+----[SHA256]-----+
fred@shop-ubuntu:~$
Generate a public/private rsa key pair.


pi5@pi5A: ~
File Edit View Search Terminal Help
fred@shop-ubuntu:~$ ssh-copy-id pi5@192.168.1.188
Copy the key to the Raspberry Pi 5
The authenticity of host '192.168.1.188 (192.168.1.188)' can't be established.
ED25519 key fingerprint is SHA256:dHeYhinyGTAjBlrxXrCsC/3uXMh/IJ+tc0zO/h9UTe8.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
Number of key(s) added: 1
Now try logging into the machine, with: "ssh 'pi5@192.168.1.188'"
and check to make sure that only the key(s) you wanted were added.
fred@shop-ubuntu:~$ ssh pi5@192.168.1.188
SSH into the Raspberry Pi 5 as a test
Linux pi5A 6.1.0-rpi4-rpi-2712 #1 SMP PREEMPT Debian 1:6.1.54-1+rpt2 (2023-10-05) aarch64
The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun Oct 29 11:14:46 2023 from 192.168.1.84
pi5@pi5A:~ $

Establish a Remote Systems Connection to the Raspberry Pi 5

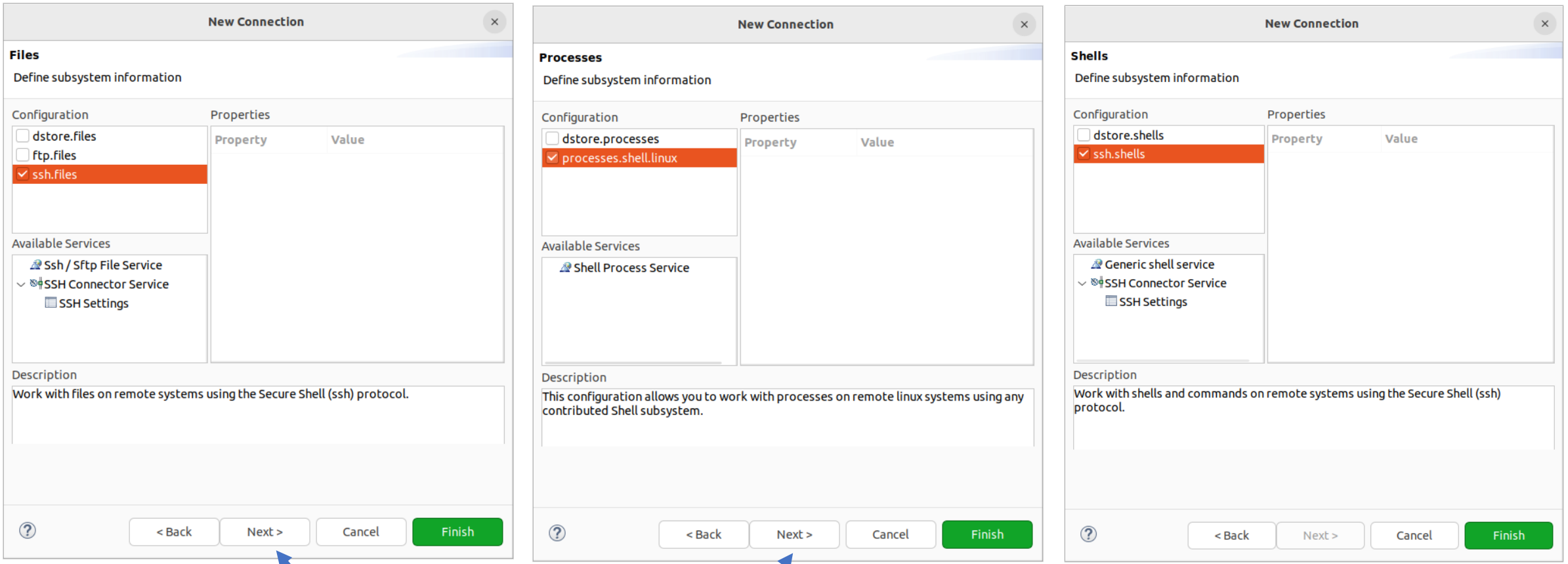



eclipse-workspace - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run
No Launch Configurations
Project Explorer
pi5_eclipse_project
RemoteSystemsTempFiles
Remote Systems
Local
Local Files
My Home
Root
Local Shells
New Connection
Select Remote System Type
Any distribution of Linux
System type:
type filter text
General
FTP Only
Linux
Local
SSH Only
Telnet Only (Experimental)
Unix
Unix
Windows
The Raspberry Pi 5 is our Remote System and it is running Linux.
< Back
Next >
Cancel
Finish
Outline
Task Lis
Build Ta
stdio.h
stdlib.h
main(void) : int
Connection: Local - Host name: LOCALHOST

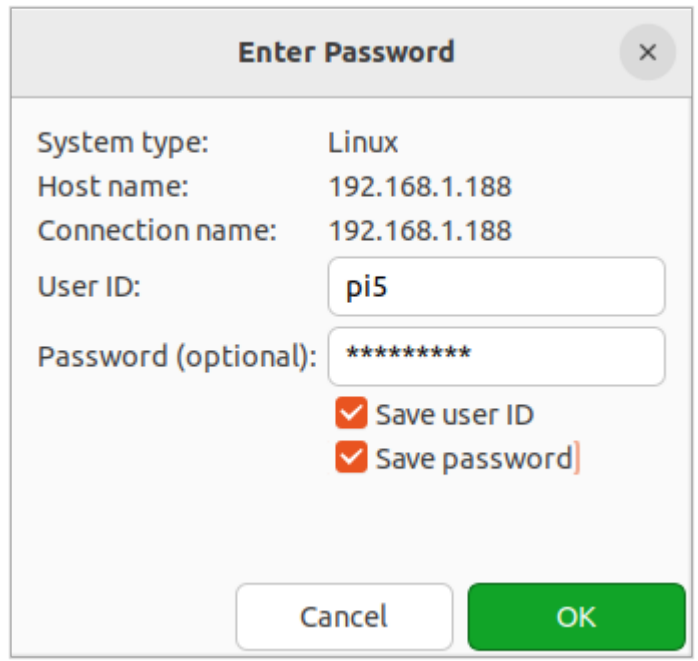


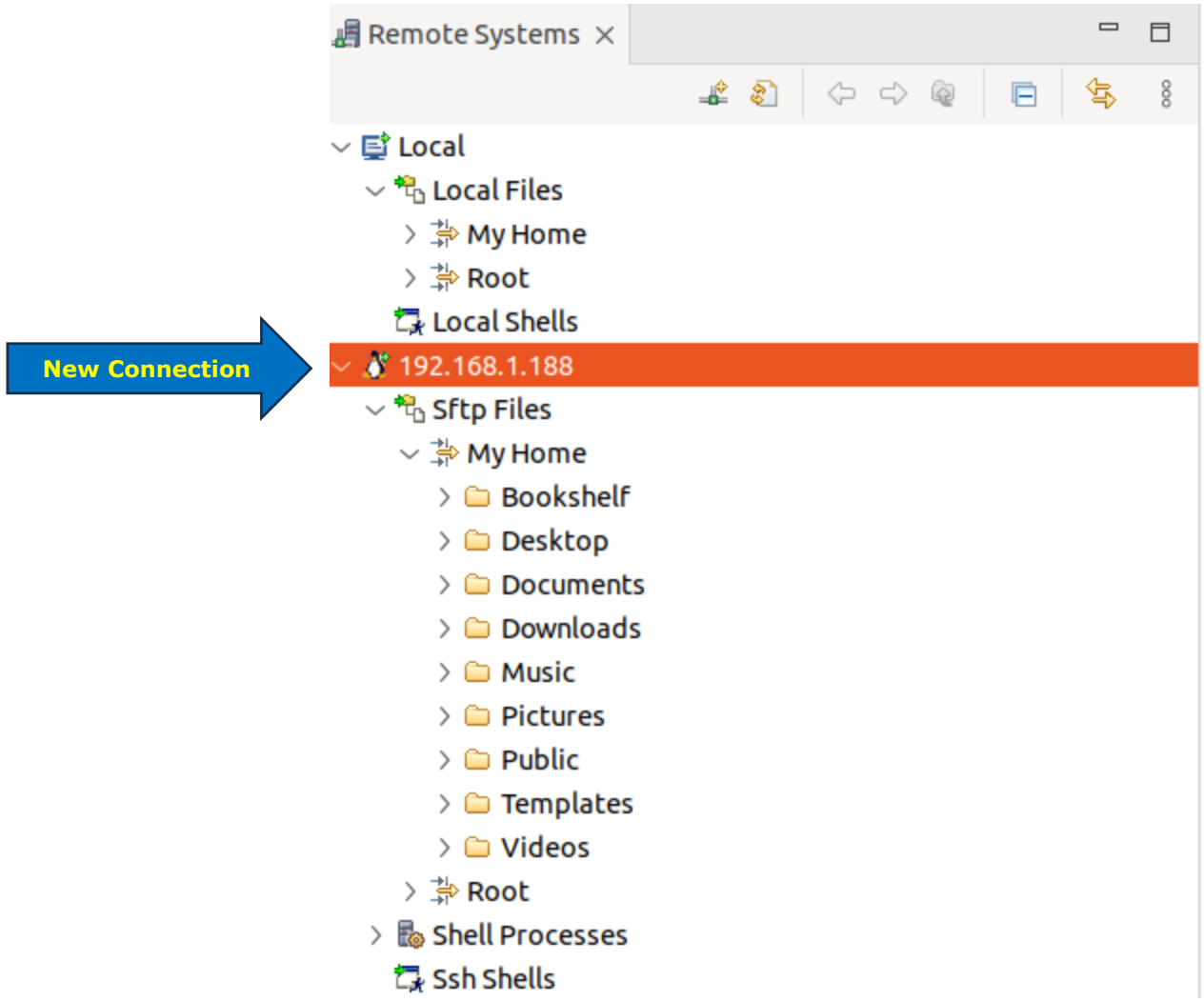
This can also be the hostname you selected for your Raspberry Pi 5 during setup.

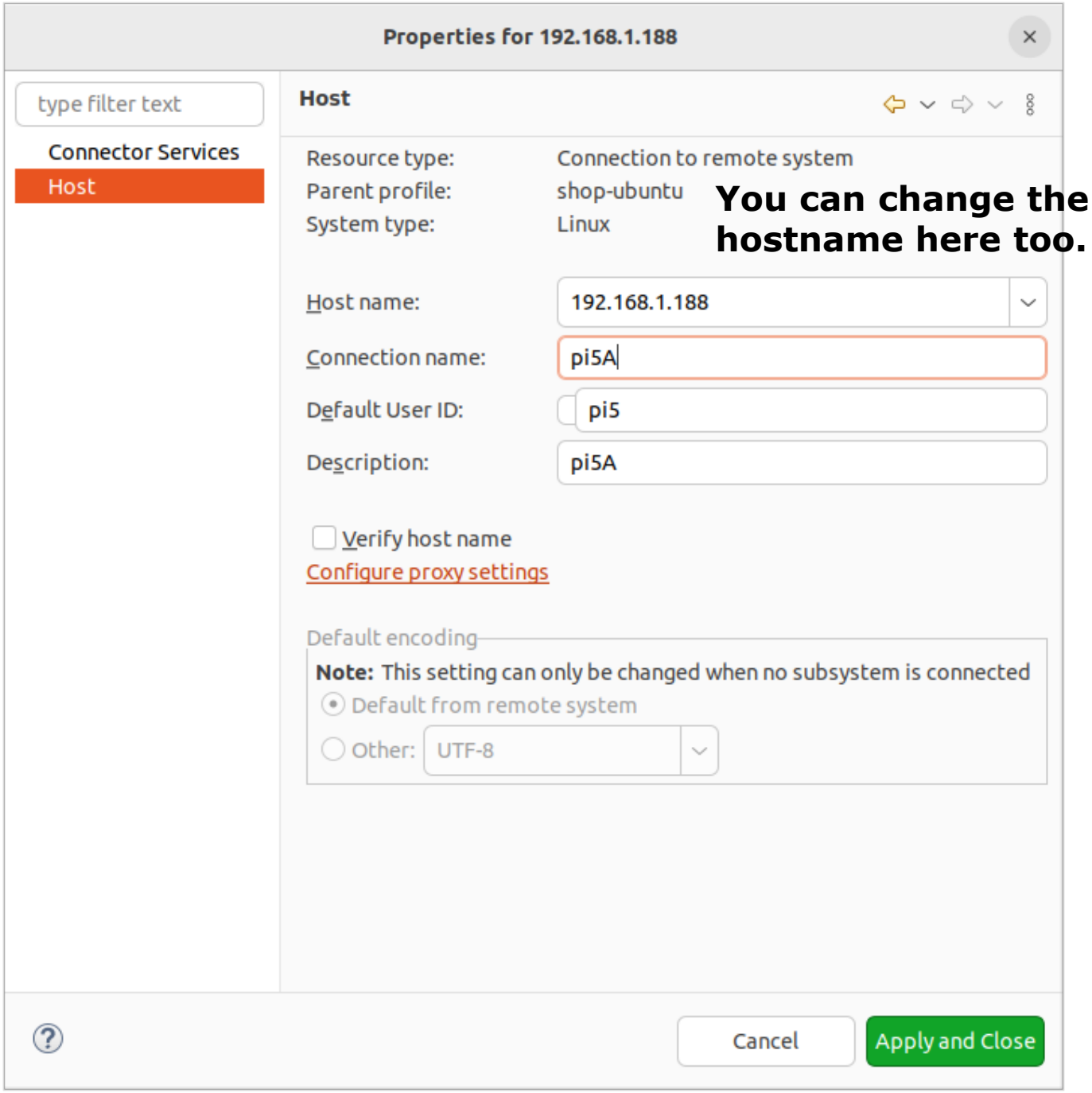
Name the connection instead of using the IP address. The name will be displayed in the Remote Systems window.



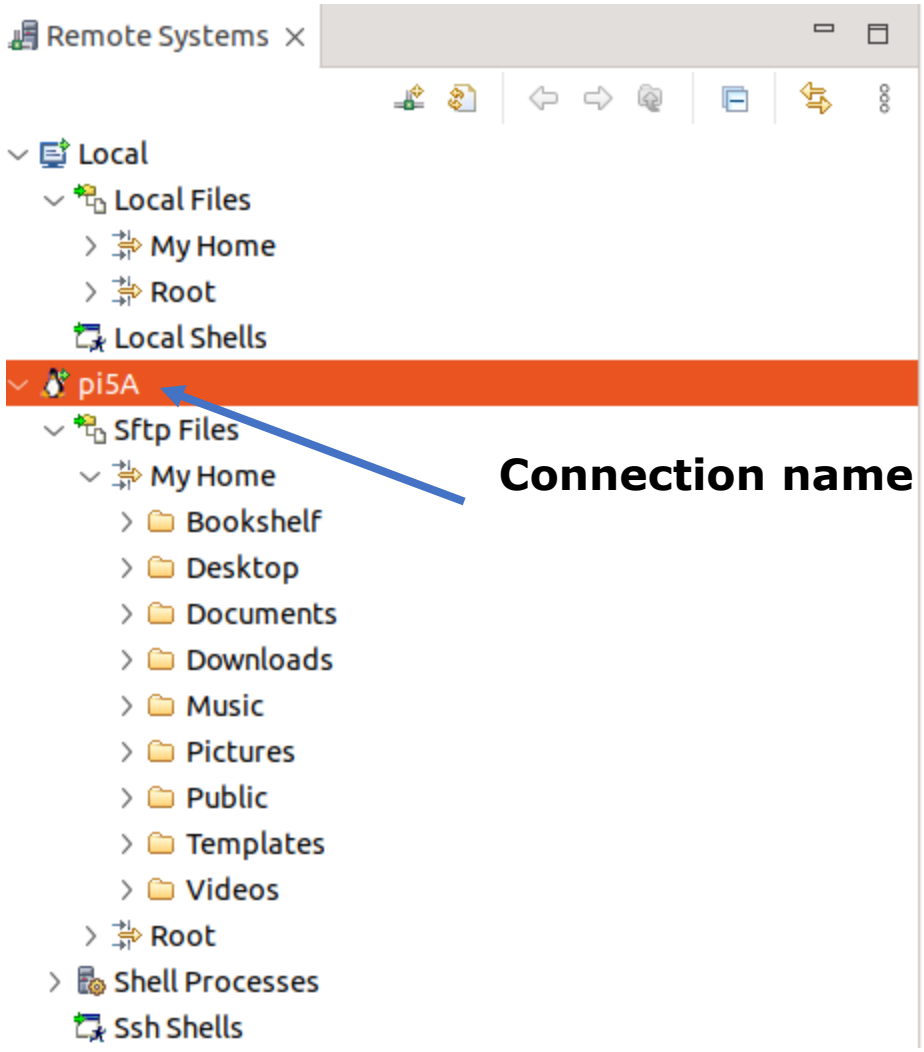
Choose the Next button here.

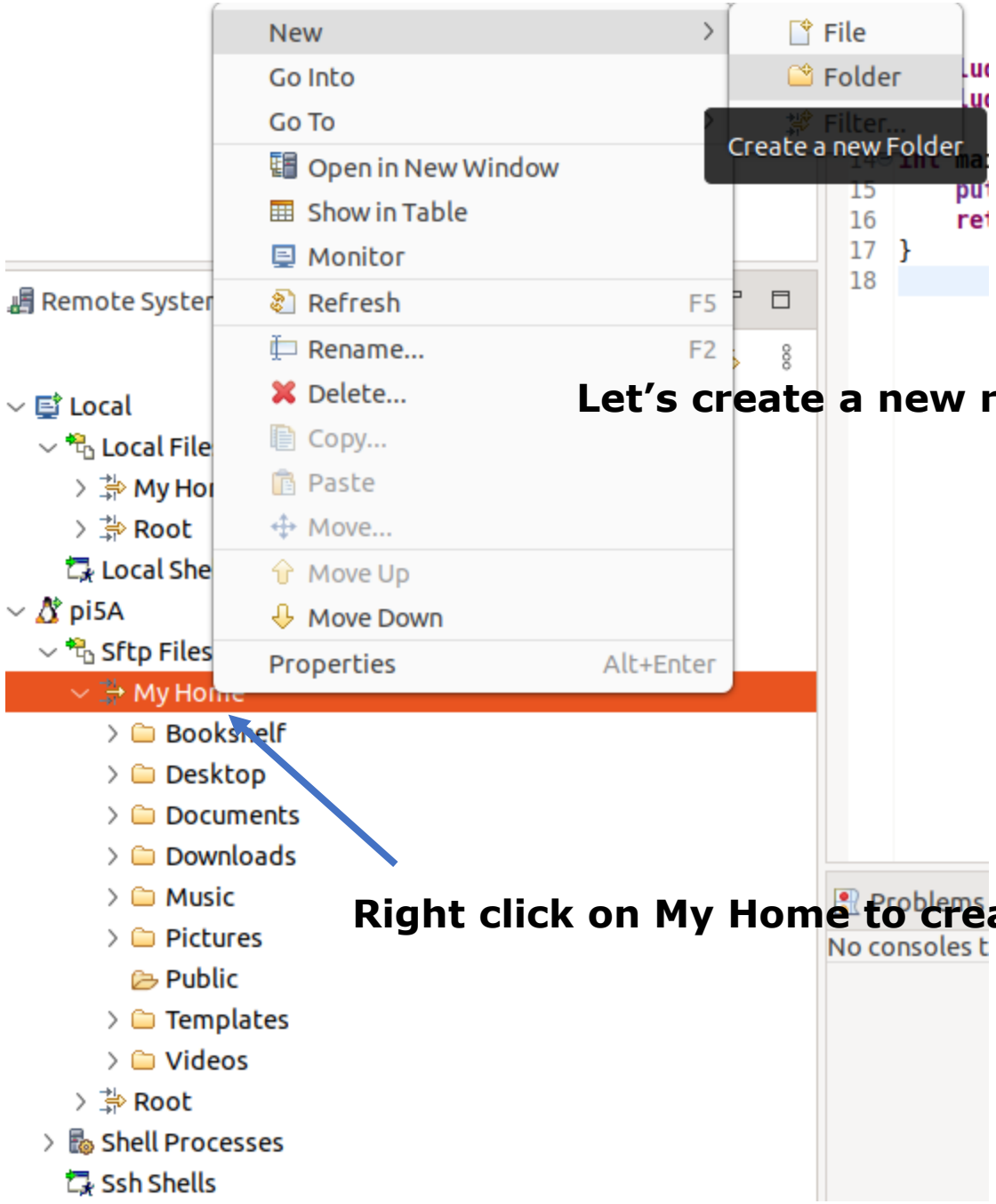

Enter Password
System type:
Linux
Host name:
192.168.1.188
Connection name:
192.168.1.188
User ID:
pi5
Password (optional):
****
Save user ID
Save password
Cancel
OK


New Connection
Remote Systems
Local
Local Files
My Home
Root
Local Shells
192.168.1.188
Sftp Files
My Home
Bookshelf
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Videos
Root
Shell Processes
Ssh Shells



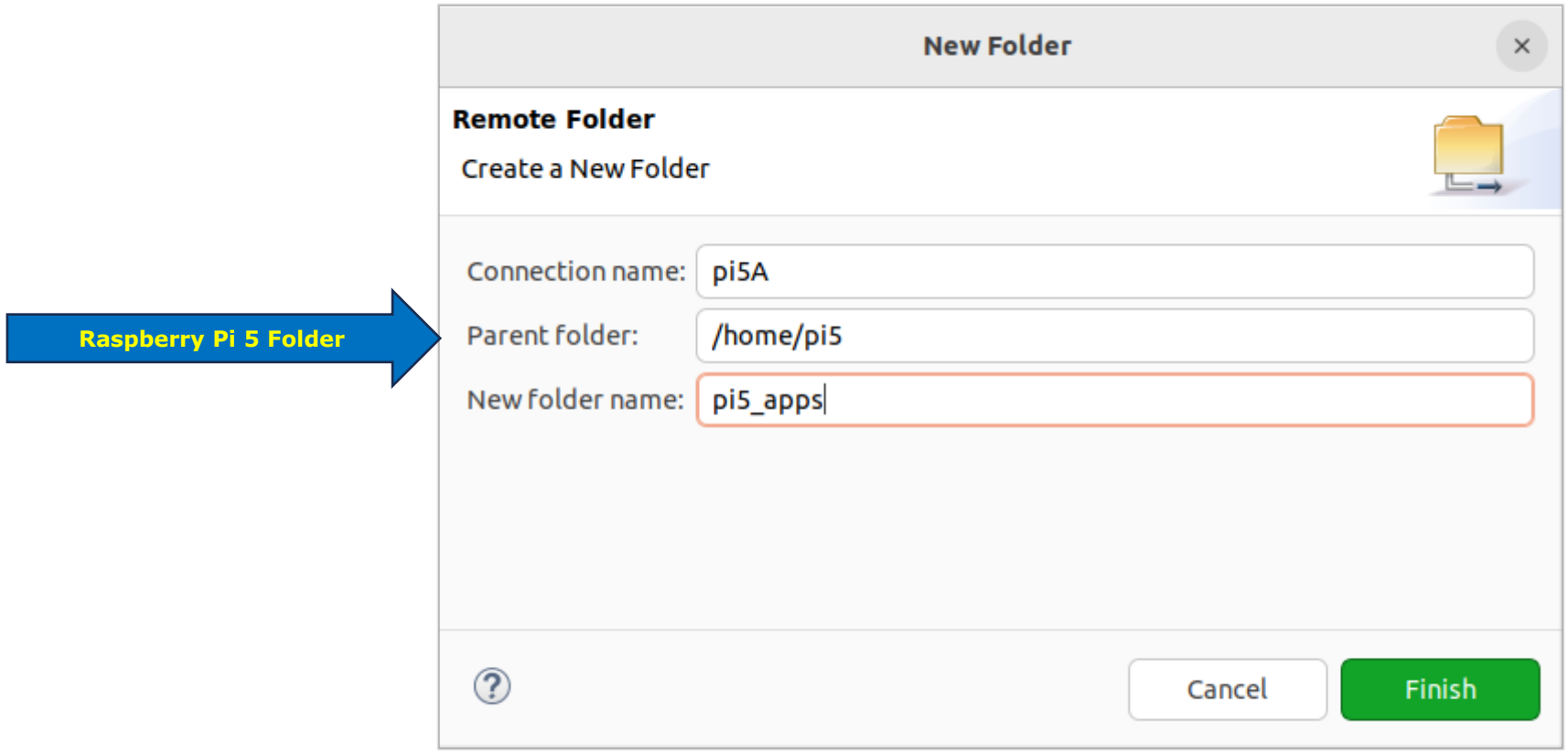
You can change the connection name and hostname here too.

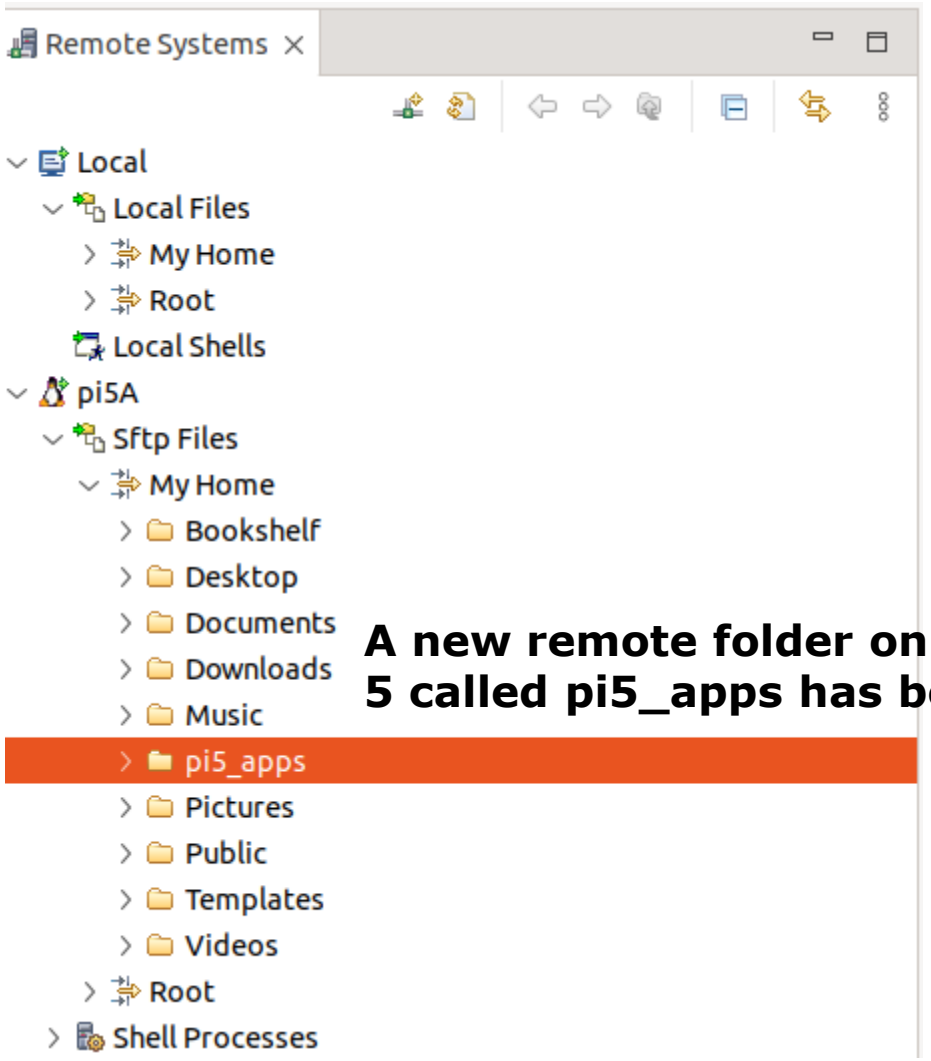

Remote Systems
Local
Local Files
My Home
Root
Local Shells
piSA
Sftp Files
My Home
Bookshelf
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Videos
Root
Shell Processes
Ssh Shells
Connection name was changed.



Let’s create a new remote folder using Eclipse.

Right click on My Home to create the new folder.

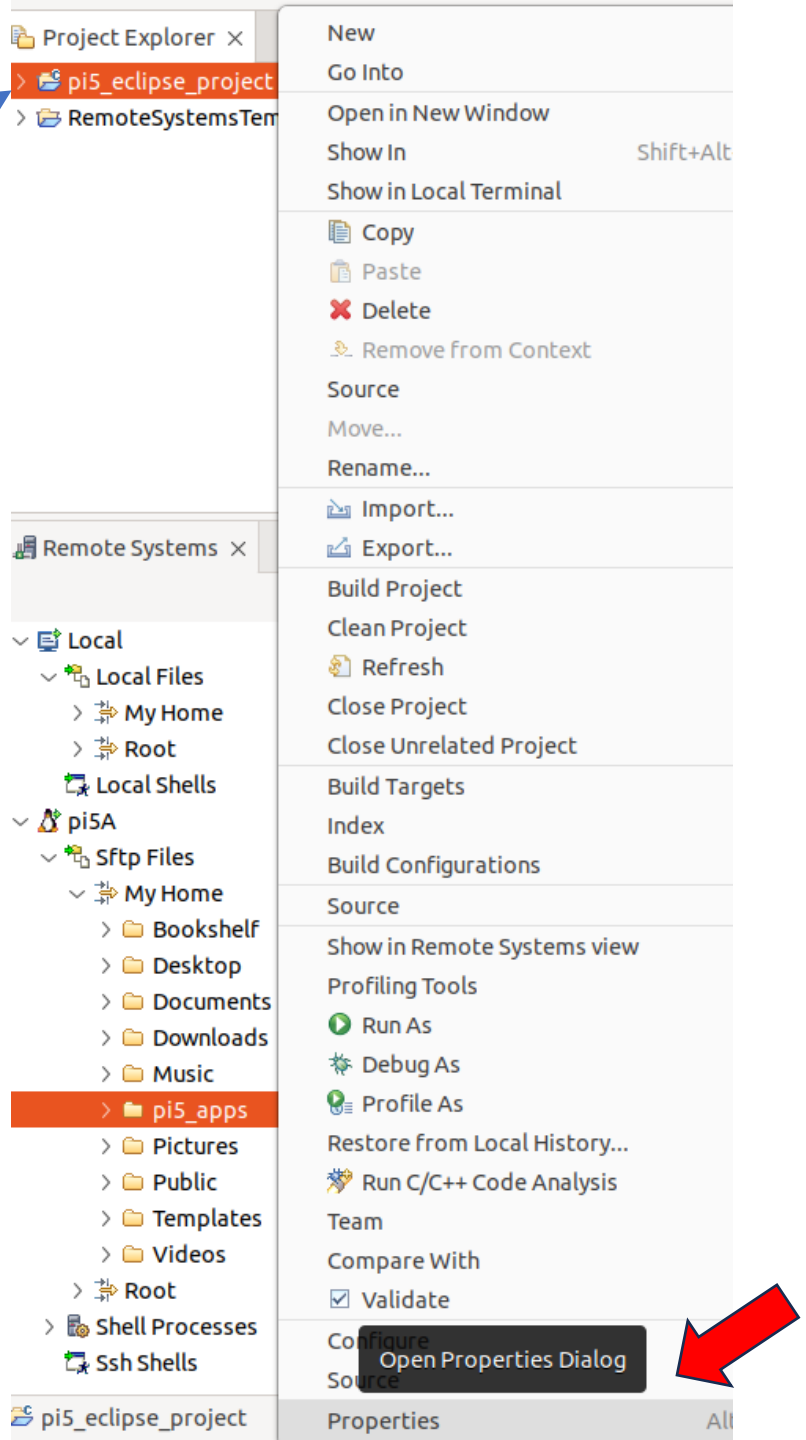

Raspberry Pi 5 Folder
New Folder
Remote Folder
Create a New Folder
Connection name:
pi5A
Parent folder:
/home/pi5
New folder name:
pi5_apps
Cancel
Finish

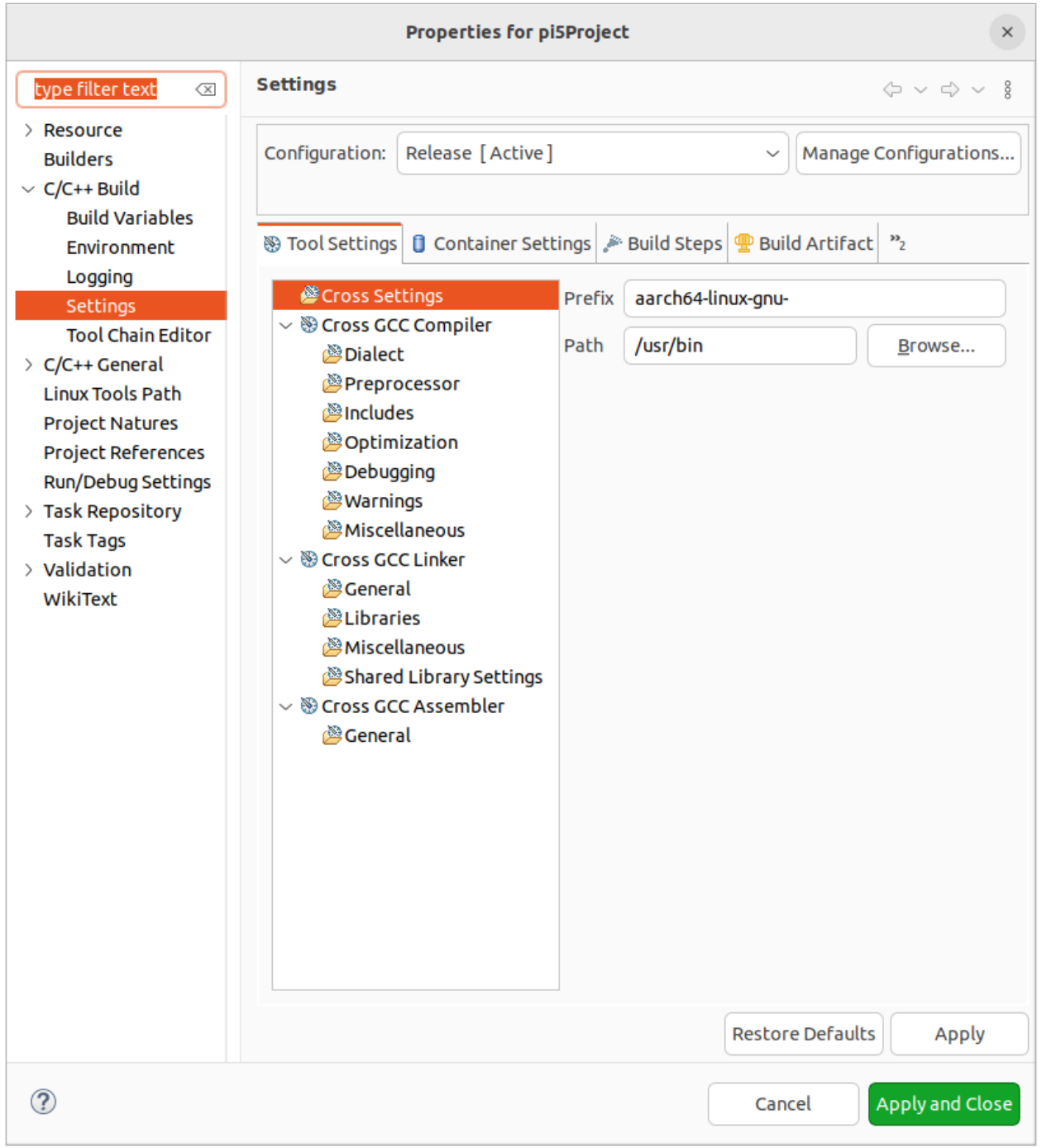


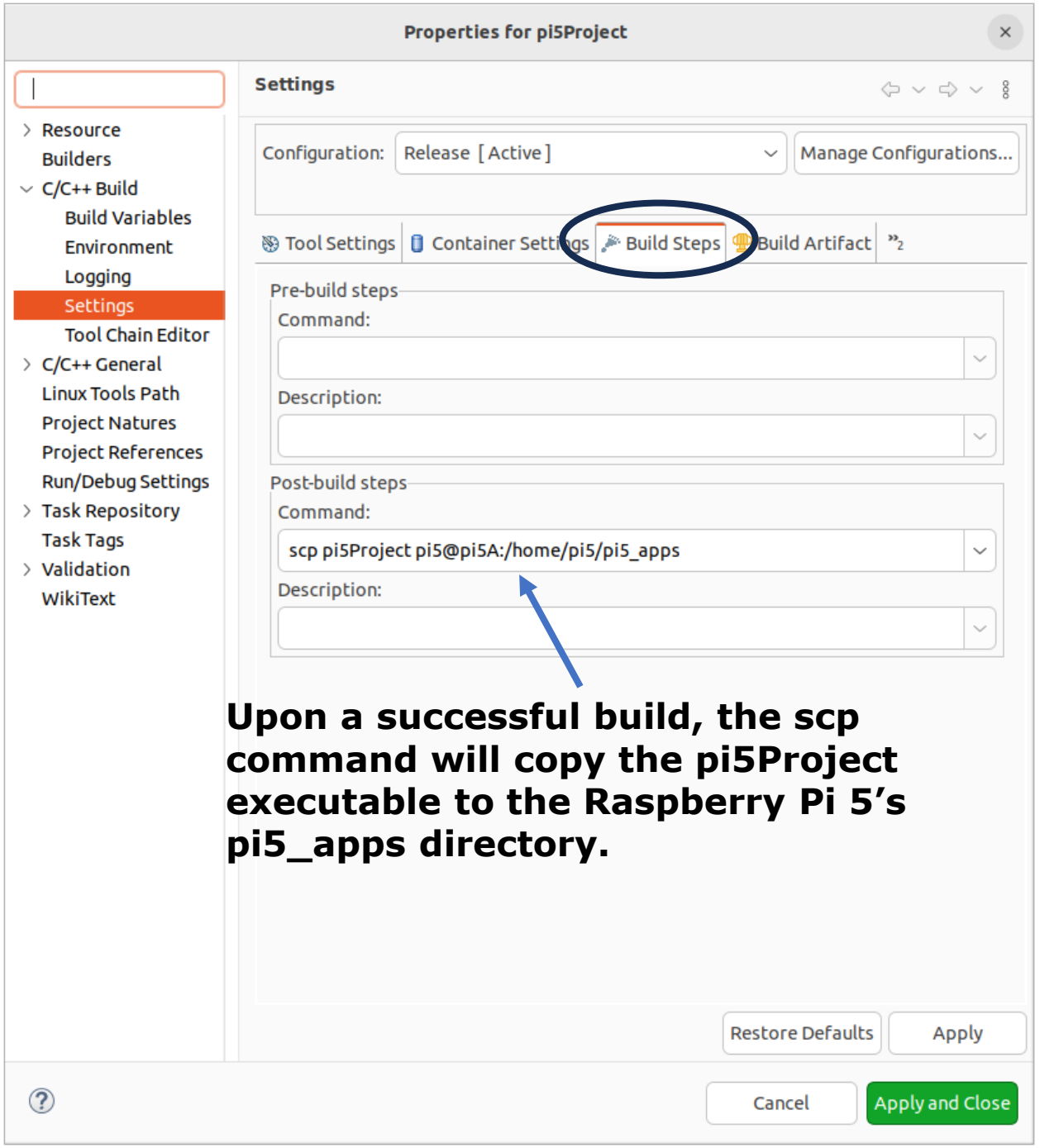
A new remote folder on the Raspberry Pi 5 called pi5_apps has been created.

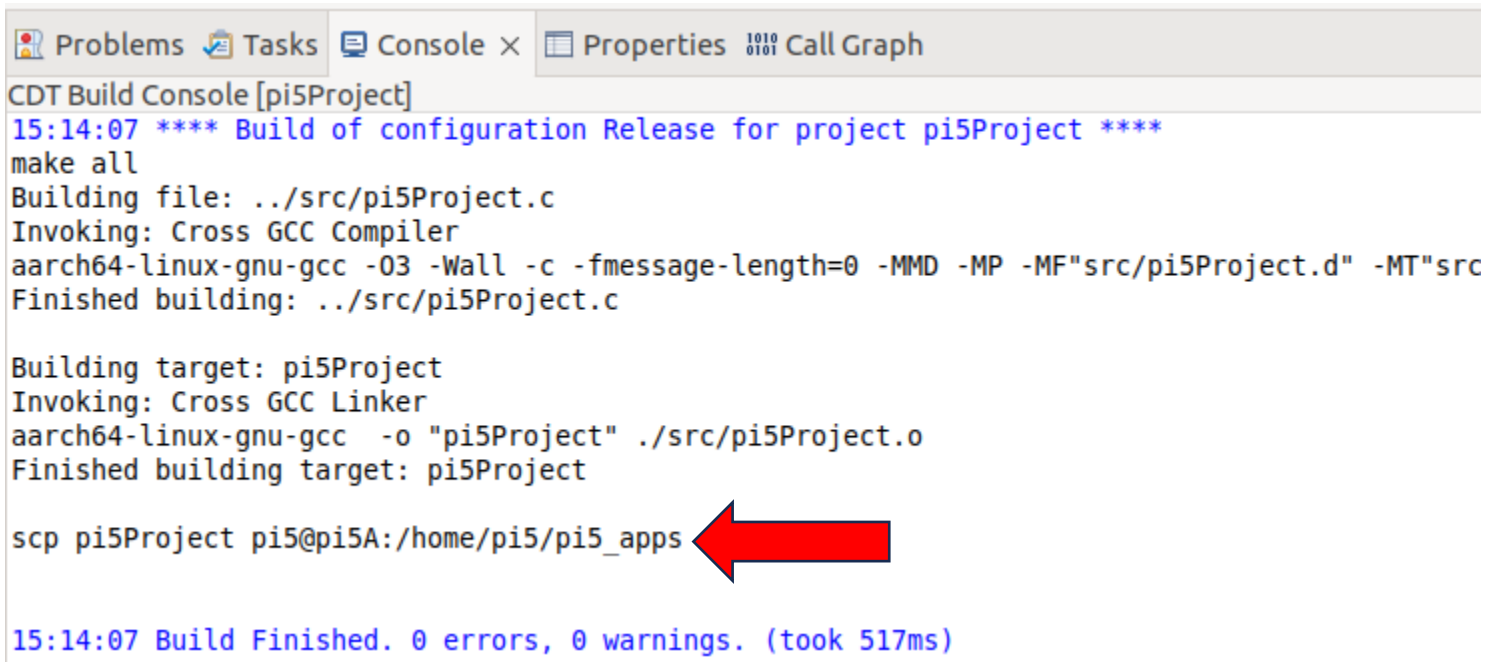
There it is!

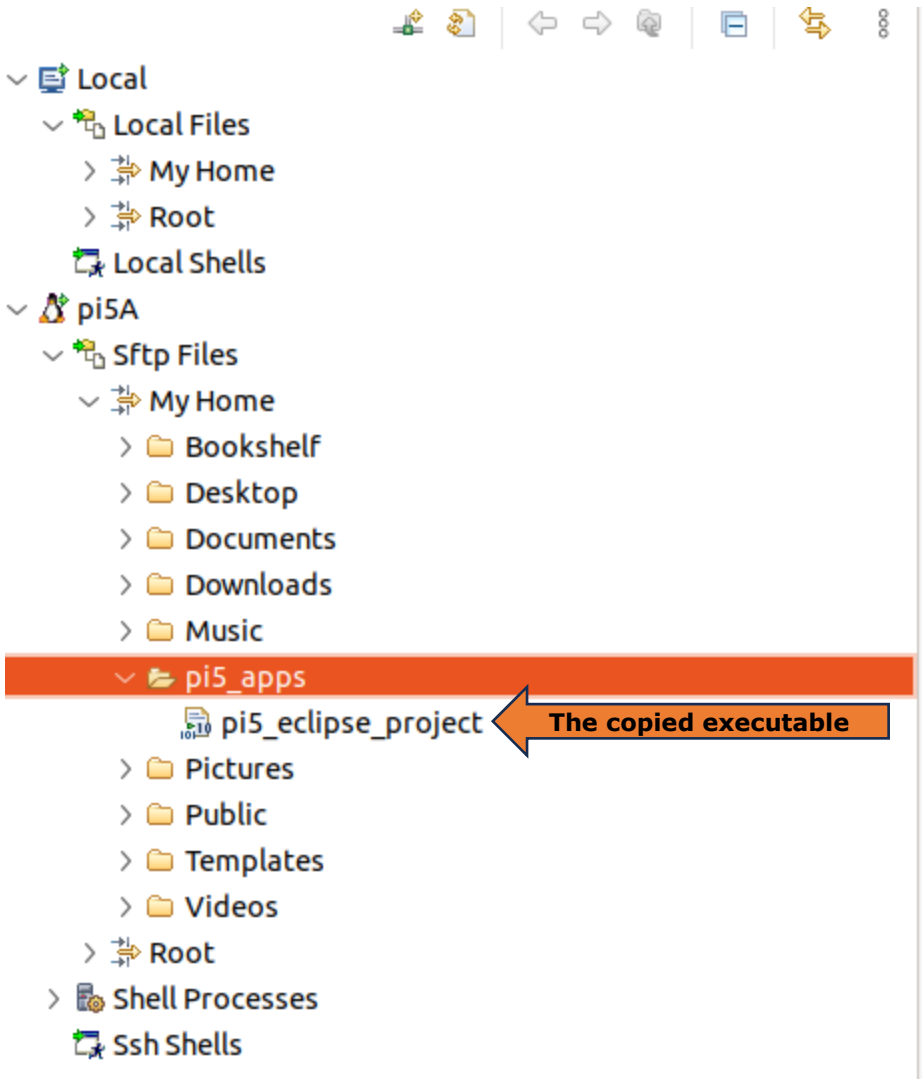
Right click here to get the Properties/Settings window.

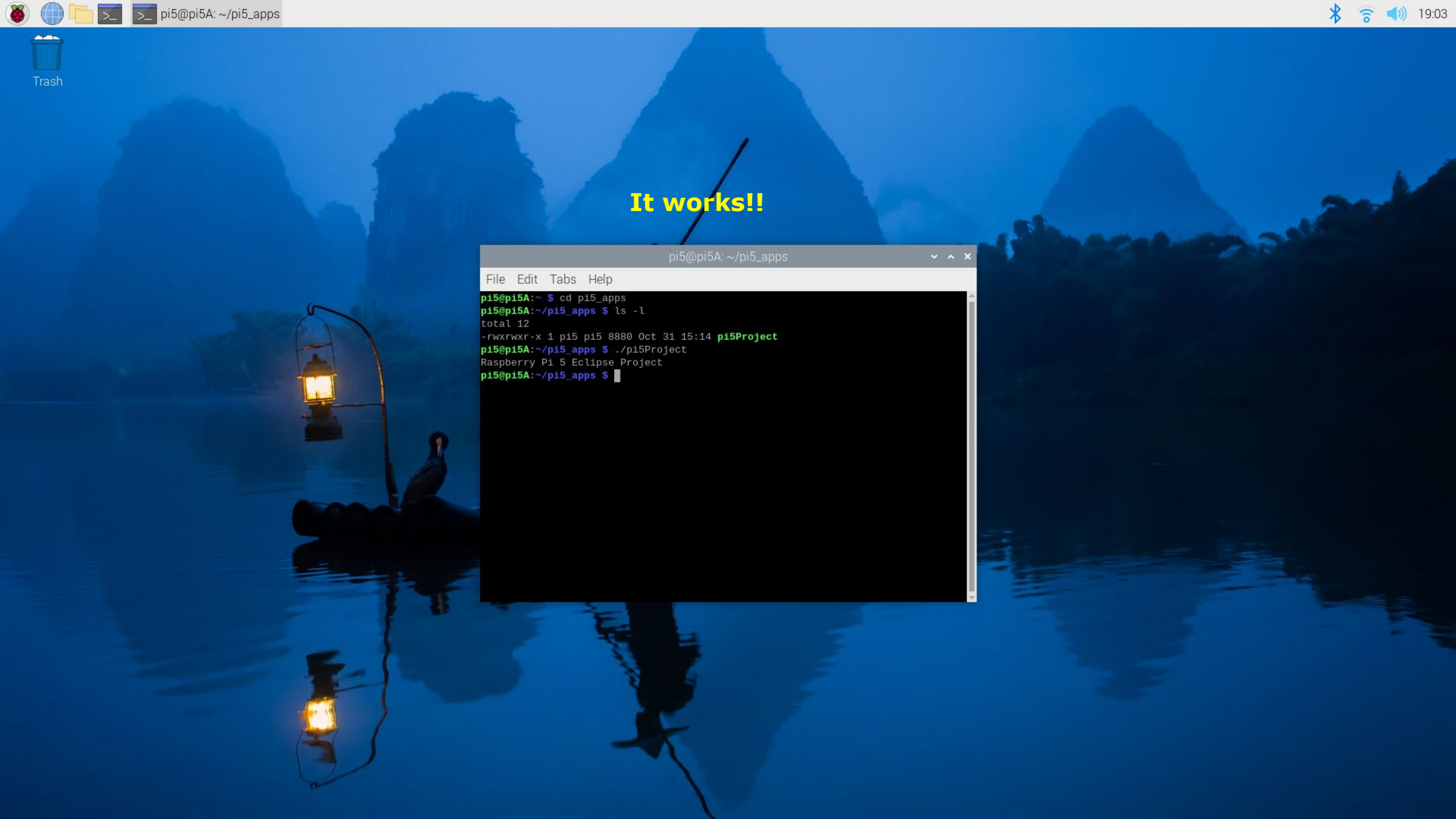



Properties for pi5Project
type filter text
Resource
Builders
C/C++ Build
Build Variables
Environment
Logging
Settings
Tool Chain Editor
C/C++ General
Linux Tools Path
Project Natures
Project References
Run/Debug Settings
Task Repository
Task Tags
Validation
WikiText
Settings
Configuration:
Release [Active]
Manage Configurations...
Tool Settings
Container Settings
Build Steps
Build Artifact
Cross Settings
Cross GCC Compiler
Dialect
Preprocessor
Includes
Optimization
Debugging
Warnings
Miscellaneous
Cross GCC Linker
General
Libraries
Miscellaneous
Shared Library Settings
Cross GCC Assembler
General
Prefix
aarch64-linux-gnu-
Path
/usr/bin
Browse...
Restore Defaults
Apply
Cancel
Apply and Close


Properties for pi5Project
Resource
Builders
C/C++ Build
Build Variables
Environment
Logging
Settings
Tool Chain Editor
C/C++ General
Linux Tools Path
Project Natures
Project References
Run/Debug Settings
Task Repository
Task Tags
Validation
WikiText
Settings
Configuration: Release [Active]
Manage Configurations...
Tool Settings
Container Settings
Build Steps
Build Artifact
Pre-build steps
Command:
Description:
Post-build steps
Command:
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
Description:
Upon a successful build, the scp command will copy the pi5Project executable to the Raspberry Pi 5's pi5_apps directory.
Restore Defaults
Apply
Cancel
Apply and Close


Problems
Tasks
Console
Properties
Call Graph
CDT Build Console [pi5Project]
15:14:07 **** Build of configuration Release for project pi5Project ****
make all
Building file: ../src/pi5Project.c
Invoking: Cross GCC Compiler
aarch64-linux-gnu-gcc -O3 -Wall -c -fmessage-length=0 -MMD -MP -MF"src/pi5Project.d" -MT"src
Finished building: ../src/pi5Project.c
Building target: pi5Project
Invoking: Cross GCC Linker
aarch64-linux-gnu-gcc -o "pi5Project" ./src/pi5Project.o
Finished building target: pi5Project
scp pi5Project pi5@pi5A:/home/pi5/pi5_apps
15:14:07 Build Finished. 0 errors, 0 warnings. (took 517ms)


Local
Local Files
My Home
Root
Local Shells
pi5A
Sftp Files
My Home
Bookshelf
Desktop
Documents
Downloads
Music
pi5_apps
pi5_eclipse_project
The copied executable
Pictures
Public
Templates
Videos
Root
Shell Processes
Ssh Shells


pi5@pi5A: ~/pi5_apps
19:03
Trash
It works!!
pi5@pi5A: ~/pi5_apps
File Edit Tabs Help
pi5@pi5A:~ $ cd pi5_apps
pi5@pi5A:~/pi5_apps $ ls -l
total 12
-rwxrwxr-x 1 pi5 pi5 8880 Oct 31 15:14 pi5Project
pi5@pi5A:~/pi5_apps $ ./pi5Project
Raspberry Pi 5 Eclipse Project
pi5@pi5A:~/pi5_apps $