Rosetta

Software Installation and Setup

Version 0.01
23 November 2023

Rosetta – Instructions for Building

Overview

This document is for installing and setting up LinuxCNC on the Raspberry Pi 4.

Prerequisites

This set of instructions requires you have the following.
1. A computer connected to the internet with Windows, macOS, or Linux.
2. A microSD card reader/writer on that computer.
3. A Raspberry Pi 4B
4. A Mesa 7C81 RPI FPGA board
5.

Instructions

#	Instructions and Comments
1	Download and install the latest Raspberry Pi Imager (version 1.8.1 or later). This is available at https://www.raspberrypi.com/software/. The Raspberry Pi Imager is used to create the boot disk for the Raspberry Pi using the image downloaded in step 2.
2	Download the LinuxCNC image file, LinuxCNC 2.9.1 Raspberry Pi OS based on Debian 12 Bookworm This is available at http://linuxcnc.org/downloads. The file which gets downloaded is linuxcnc-2.9.1-bookworm-rpi.img.xz Be sure to get the one for the Raspberry Pi. It is probably not the 1st one on the list.

#	Instructions and Comments

3	Create the boot disk for the Raspberry Pi using the Raspberry Pi Imager on the computer from step 1 above.
	
	a. Insert the microSD card into the computer.
	b. Start the Raspberry Pi Imager.
	    i. Choose Device = Raspberry Pi 4
	    ii. Choose OS = Use Custom (the bottom selection), then select the file you downloaded (linuxcnc-2.9.1-bookworm-rpi.img.xz).
	    iii. Choose Storage = the microSD card you just added. Be sure to not select your computer's main hard drive.
	    iv. Click Next
	    v. There is no need to set the options here: they get ignored anyway. Click the button to build the image onto the microSD card.

4.	Install the microSD card into the Raspberry Pi and start the Raspberry Pi. When presented with the login screen, login with these credentials:
	
	    Username = cnc
	    Password = cnc

5.	Set some system options.
	
	a. Open a terminal session
	b. sudo menu-config
	    i. Set the system name to "linuxcnc"
	    ii. Wi-Fi is not active by default. Activate it and connect to your network if desired.

6.	Update the system a. sudo apt-get update b. sudo apt-get upgrade c. sudo autoremove d. sudo reboot

99	Disable the options no longer needed when the system is deployed for use on the rose engine.
	
	a. Wi-Fi is not needed, so disable it.
	    i. Open a terminal session
	    ii. sudo menu-config
	b.

Modification History

Version	Date	Comments