**********Draft**********

QEMU Ultibo Bare Metal
SerialConnection
07/21/21

**********Draft**********

https://en.m.wikipedia.org/wiki/QEMU

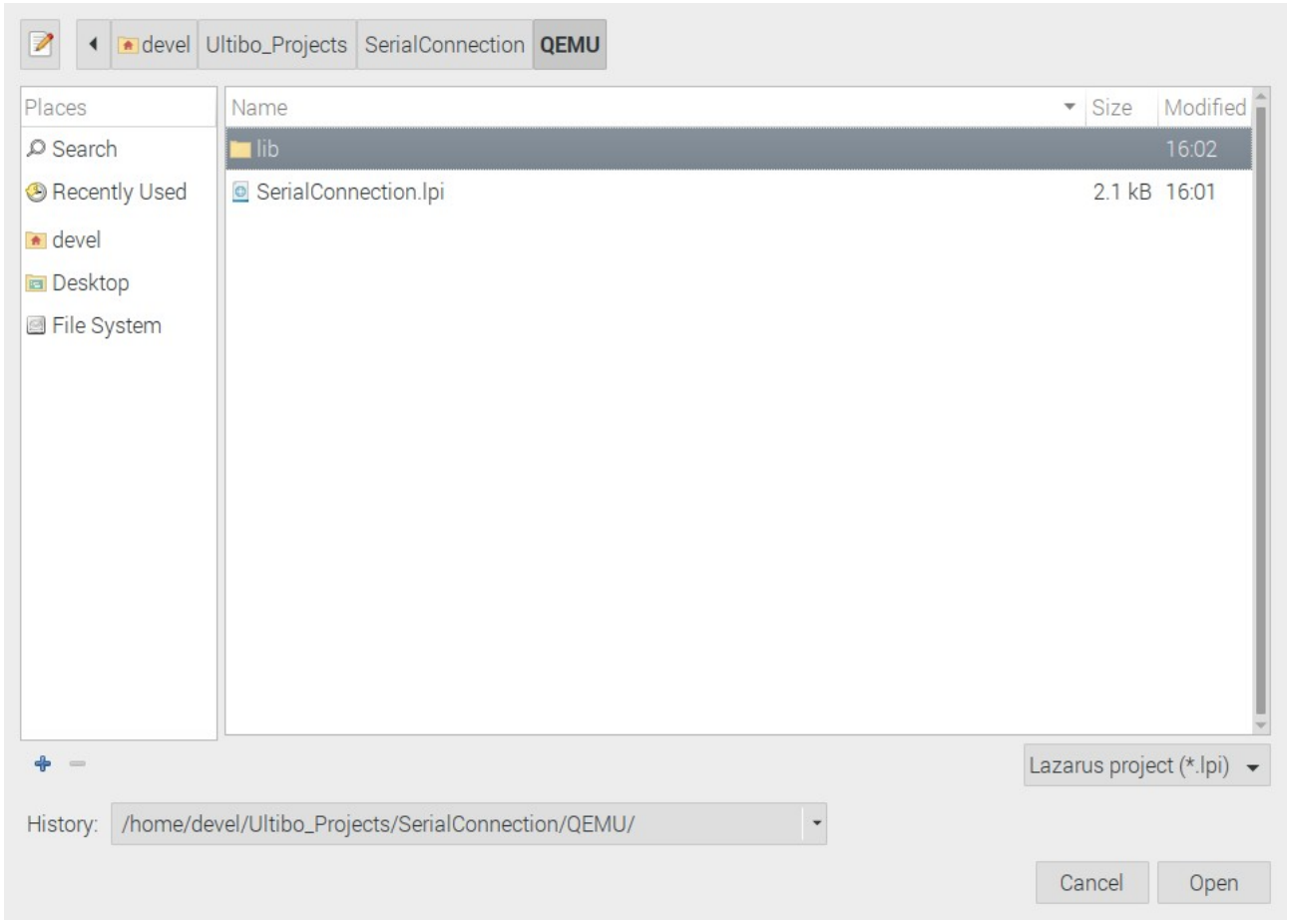
QEMU is a hosted virtual machine monitor: it emulates the machine's processor through dynamic binary translation and provides a set of different hardware and device models for the machine, enabling it to run a variety of guest operating systems. It also can be used with Kernel-based Virtual Machine (KVM) to run virtual machines at near-native speed (by taking advantage of hardware extensions such as Intel VT-x). QEMU can also do emulation for user-level processes, allowing applications compiled for one architecture to run on another.[3]

Note : Additional software is needed to run QEMU "sudo apt-get install qemu-system-arm". The following programs are added.

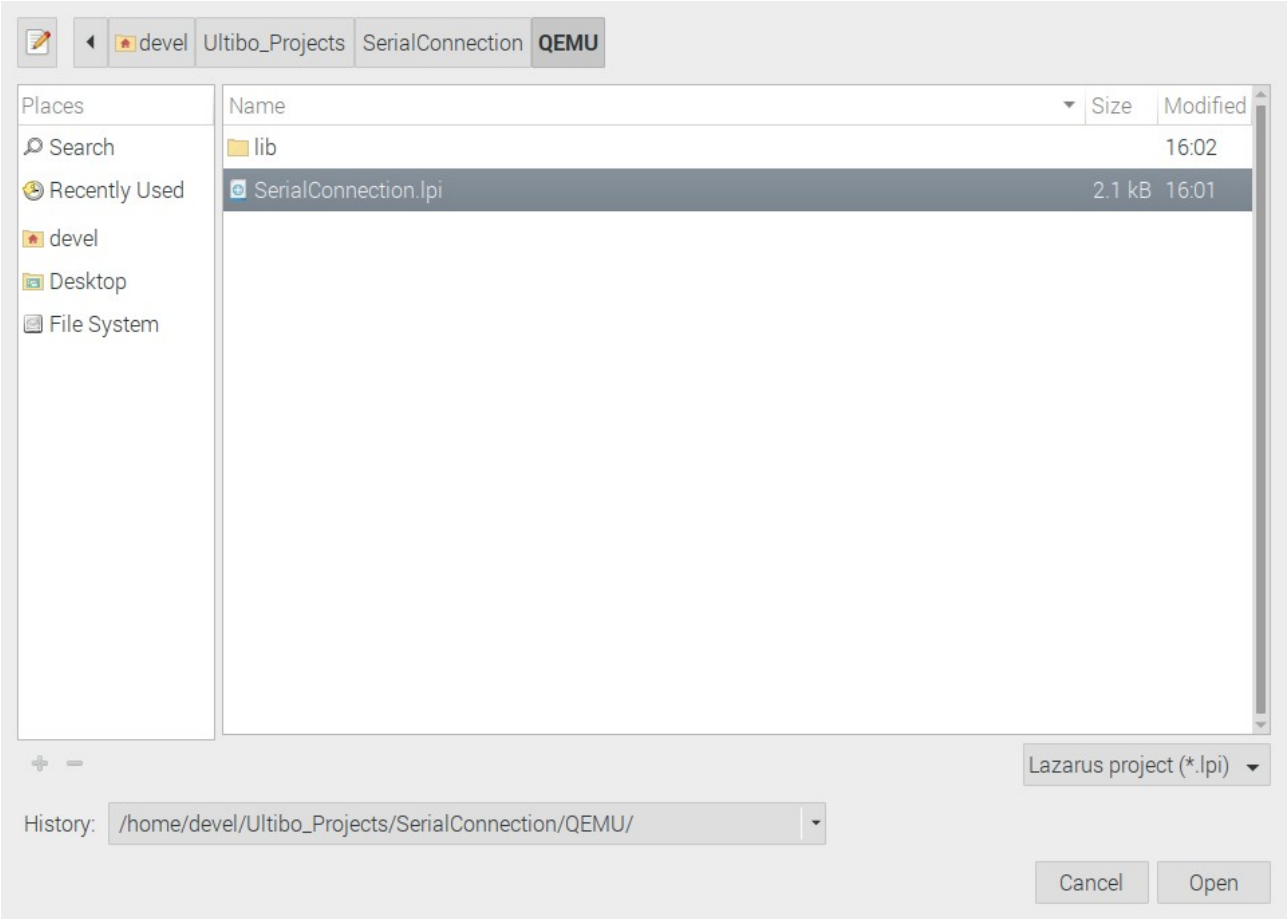
/usr/bin/qemu-img /usr/bin/qemu-nbd /usr/bin/qemu-system-aarch64
/usr/bin/qemu-io /usr/bin/qemu-pr-helper /usr/bin/qemu-system-arm

The command line for starting **Lazarus IDE (Ultibo Edition) "~/ultibo/core/lazarus.sh"**

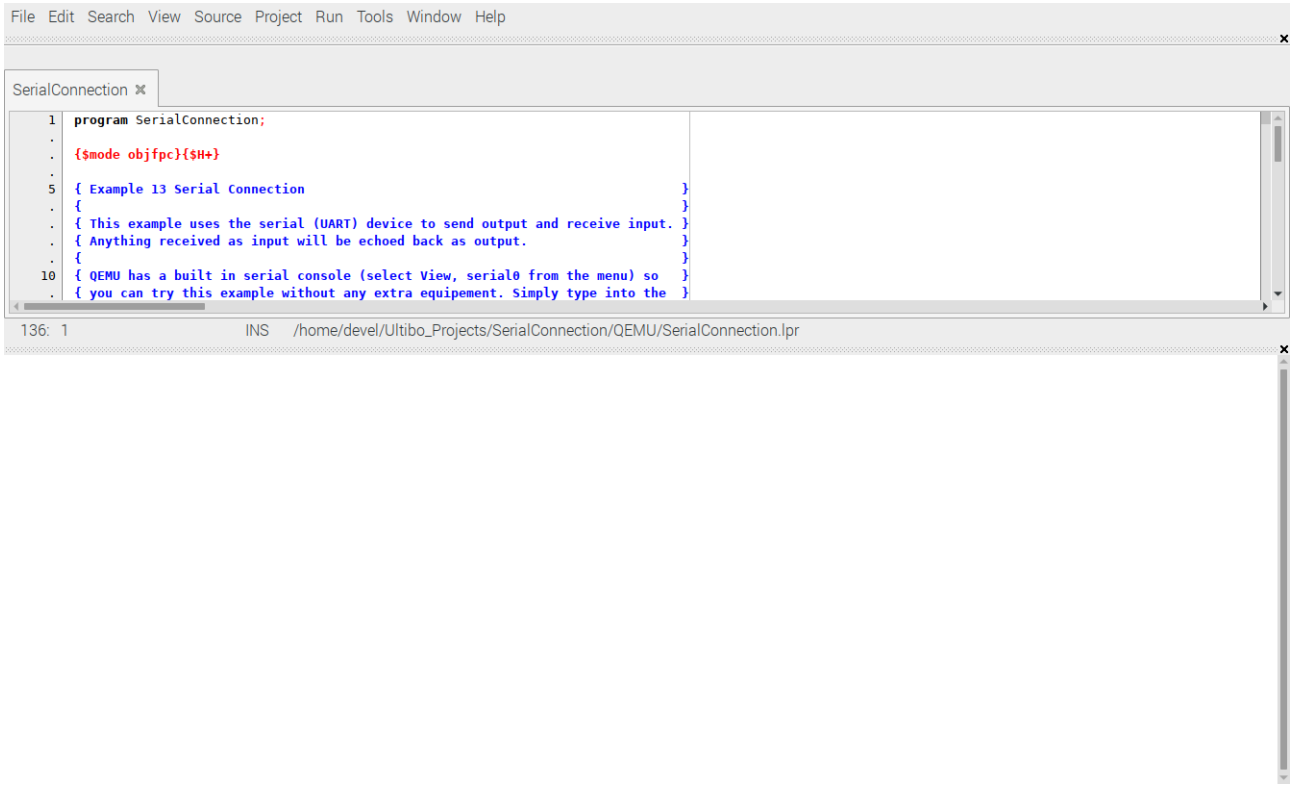
Project/Project Open


devel
Ultibo_Projects
SerialConnection
QEMU
Places
Search
Recently Used
devel
Desktop
File System
Name
Size
Modified
lib
16:02
SerialConnection.lpi
2.1 kB
16:01
Lazarus project (*.lpi)
History:
/home/devel/Ultibo_Projects/SerialConnection/QEMU/
Cancel
Open

Laz0

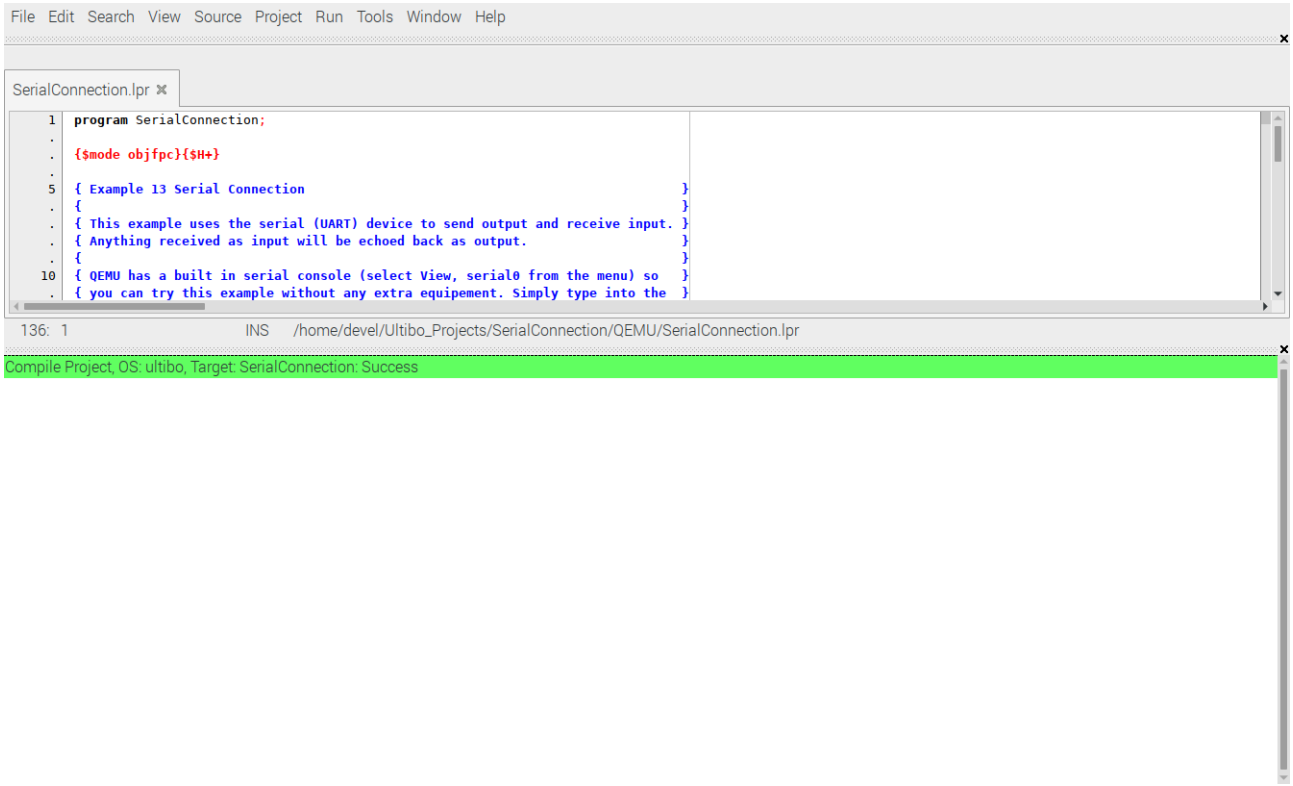


Depress Open



Laz0

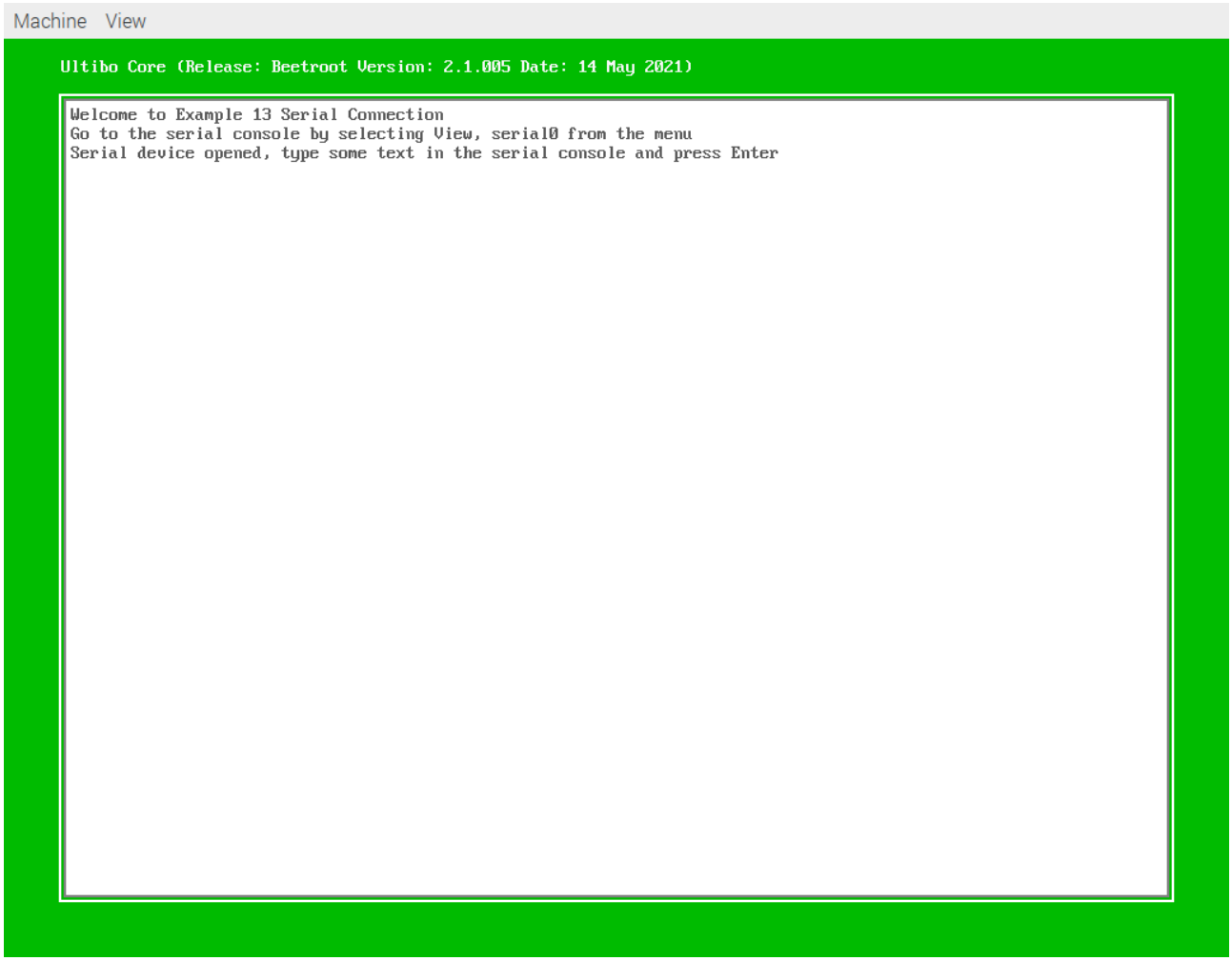
Run/Compile The kernel.bin is created when the Grean bar appers.



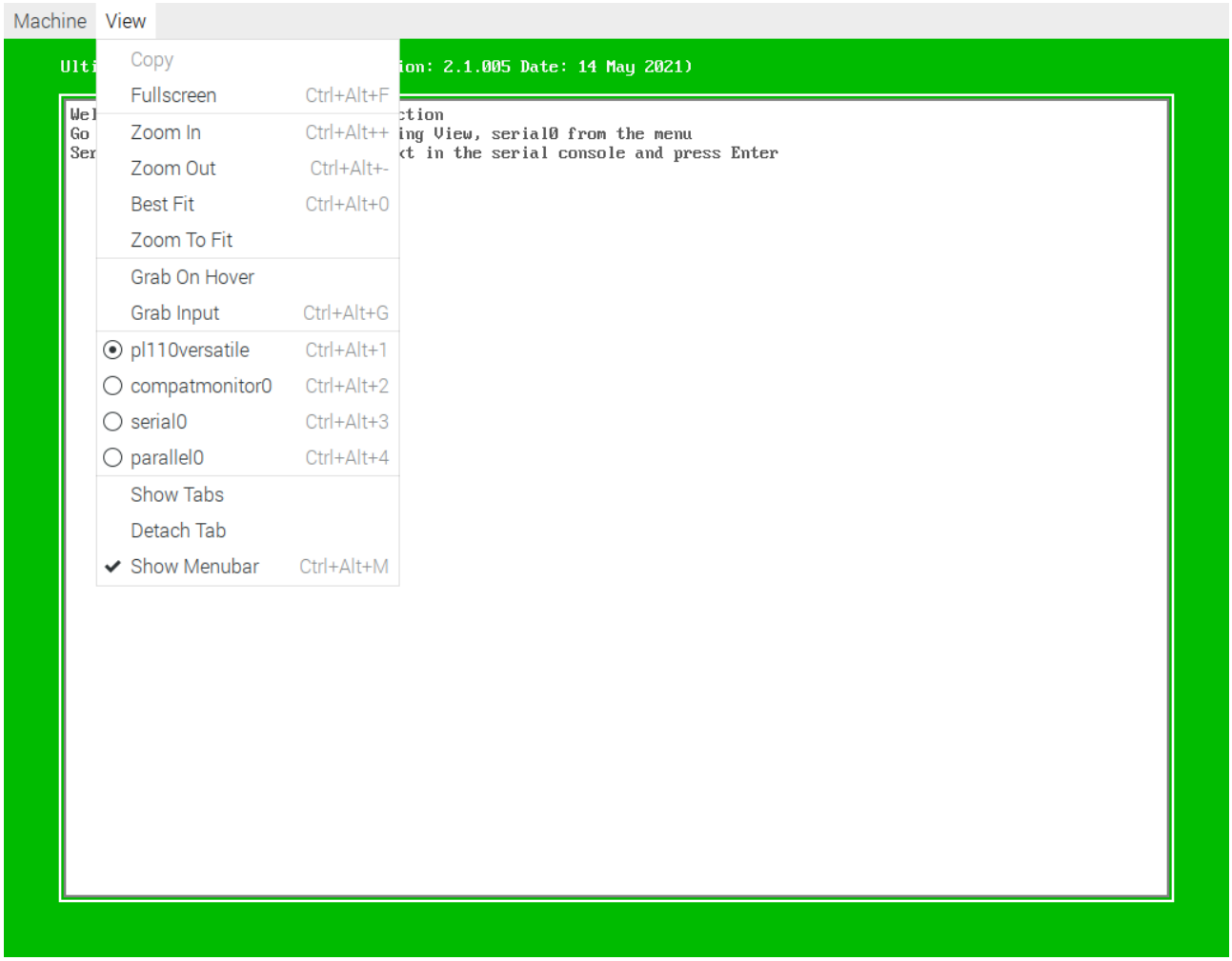
qemu

~/Ultibo_Projects/SerialConnection/QEMU

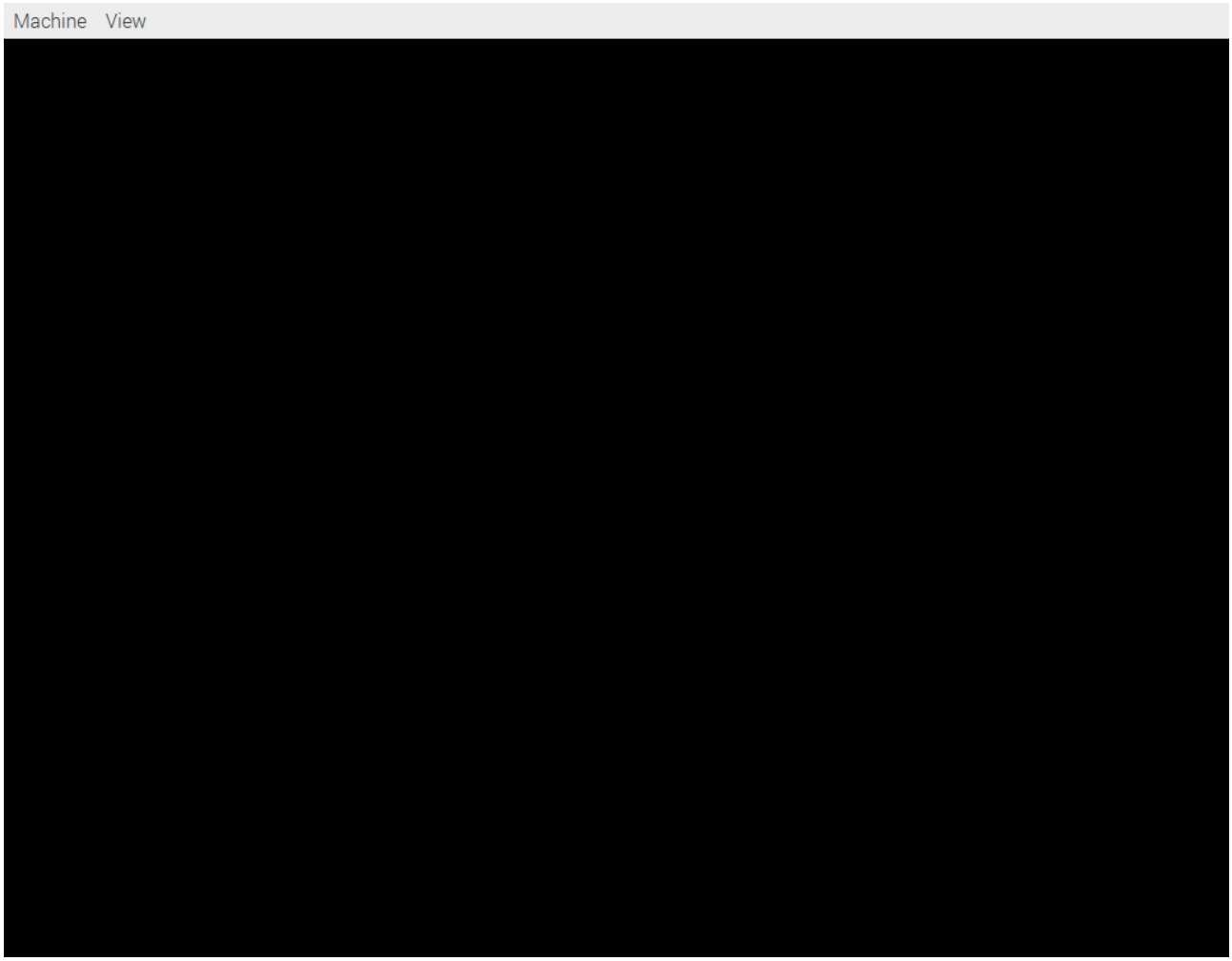
qemu-system-arm -machine versatilepb -cpu cortex-a8 -kernel kernel.bin


Machine View
Ultibo Core (Release: Beetroot Version: 2.1.005 Date: 14 May 2021)
Welcome to Example 13 Serial Connection
Go to the serial console by selecting View, serial0 from the menu
Serial device opened, type some text in the serial console and press Enter

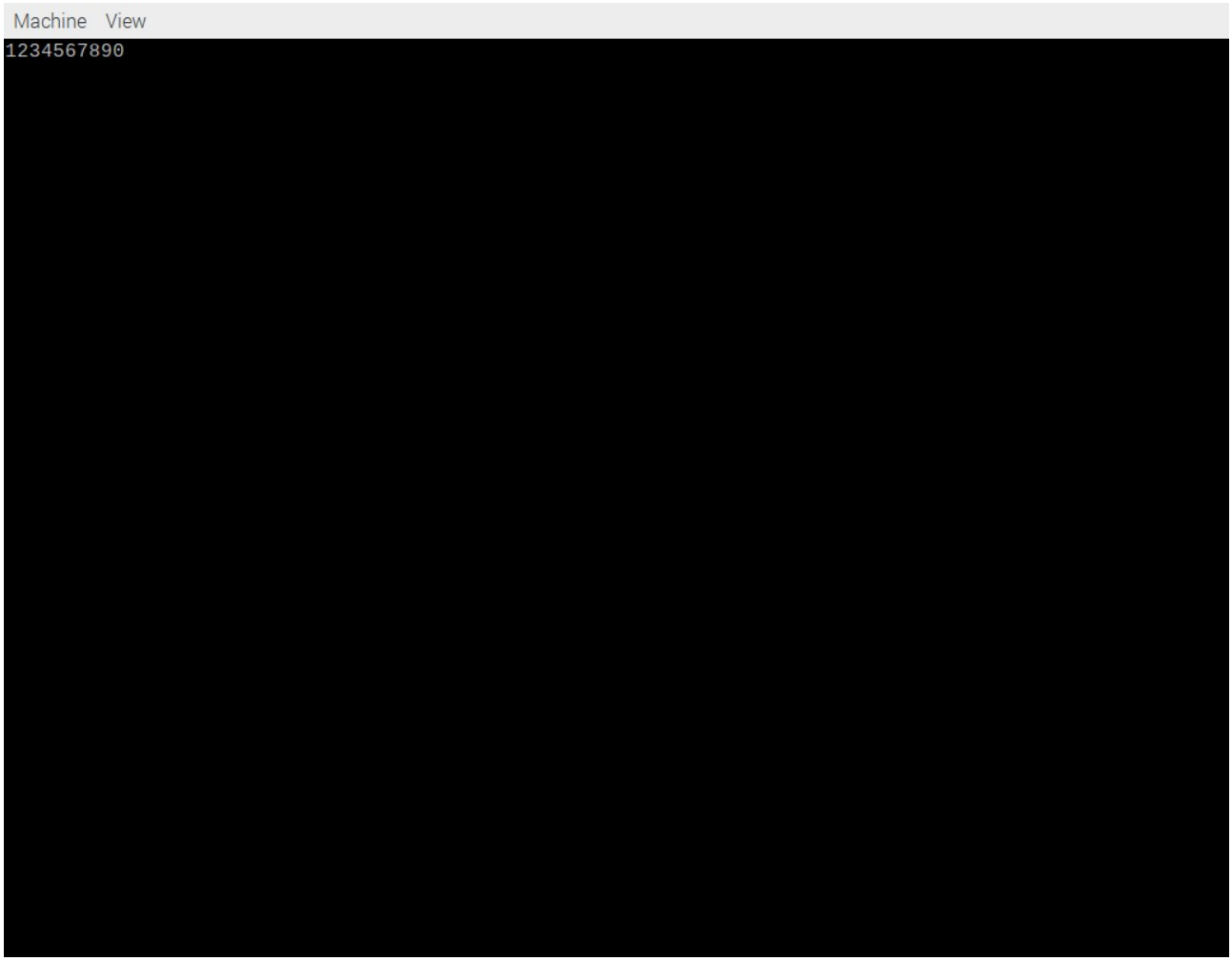
View



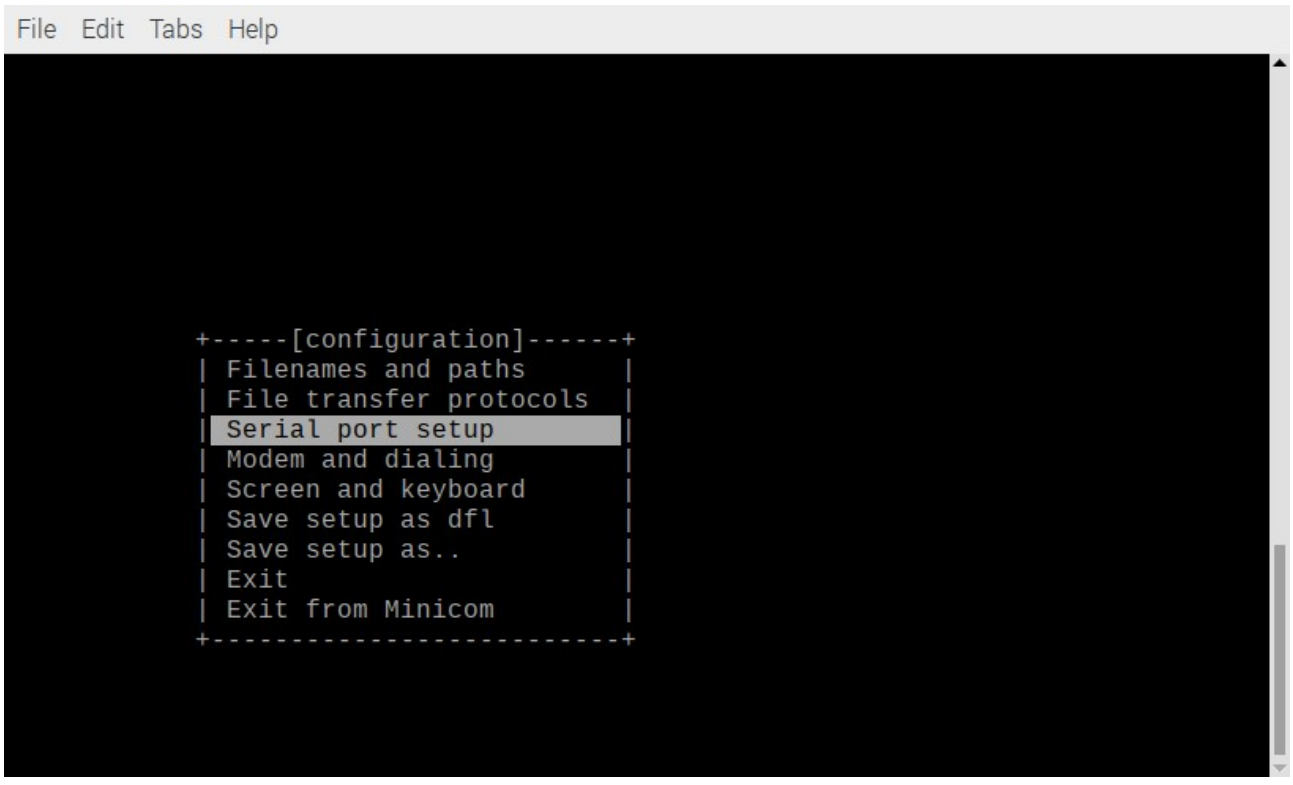
Check serial0

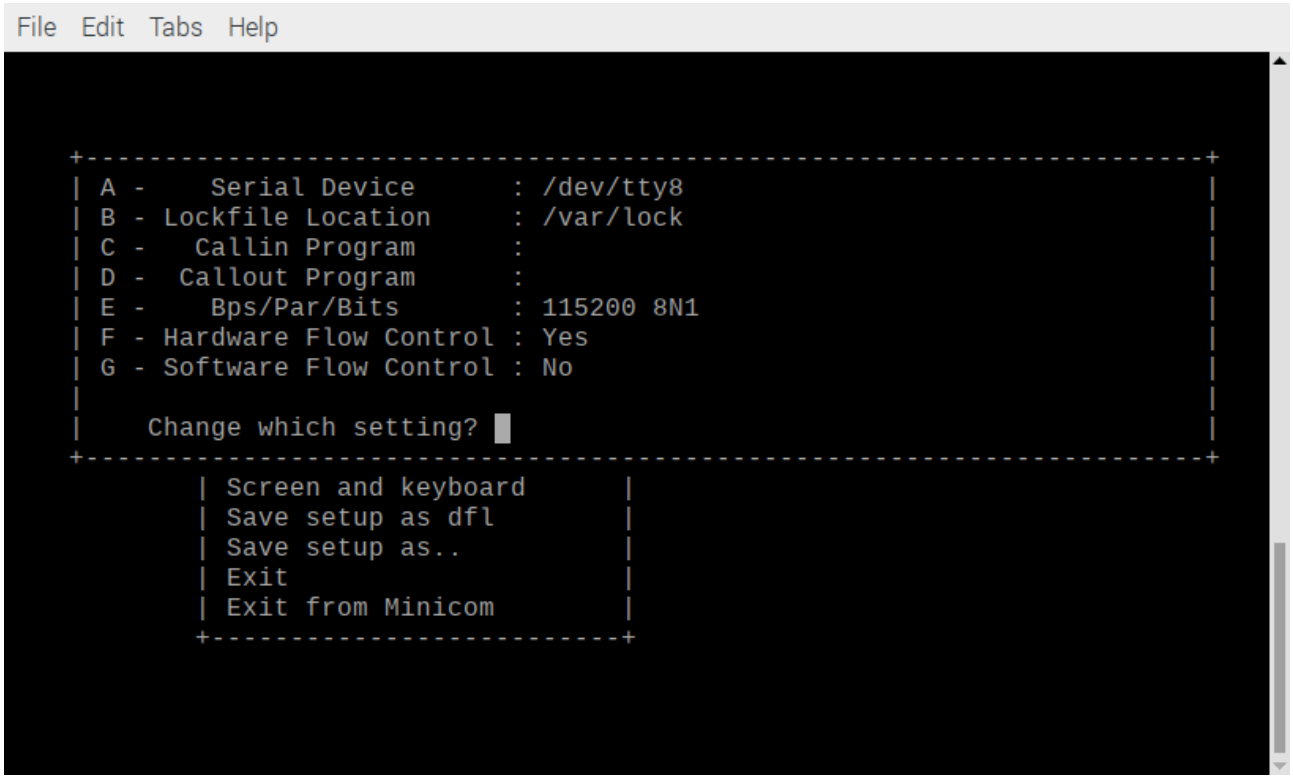


Notr: Type in the serial0 This might need additional options qemu-system-arm for it to be sent out the serial port.

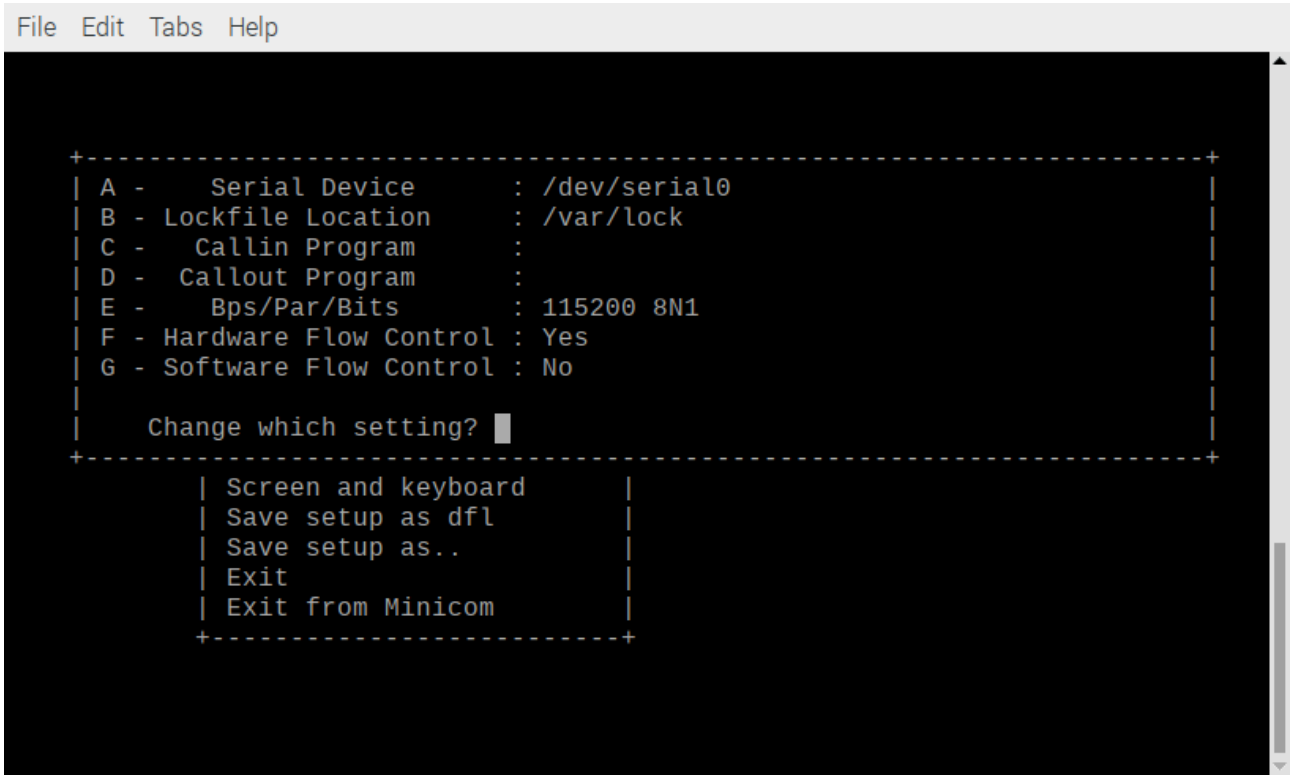


sudo minicom -s

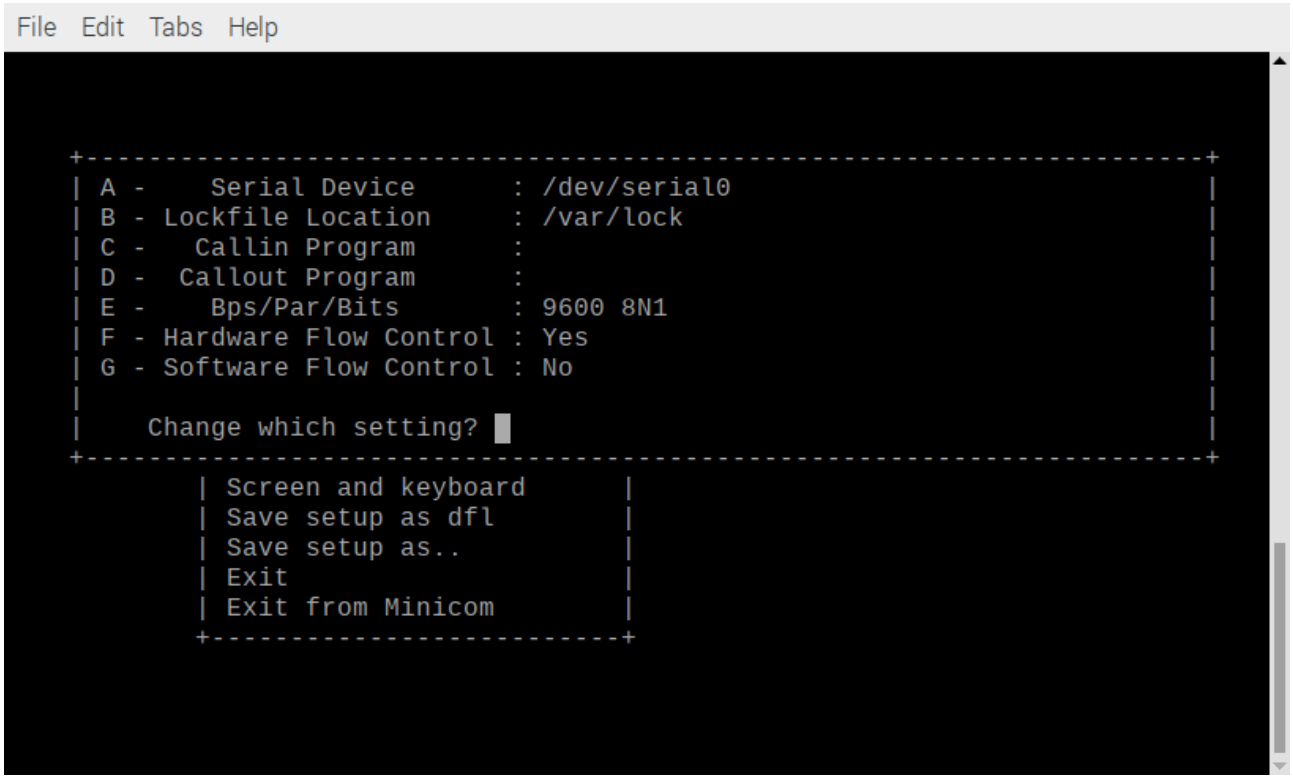




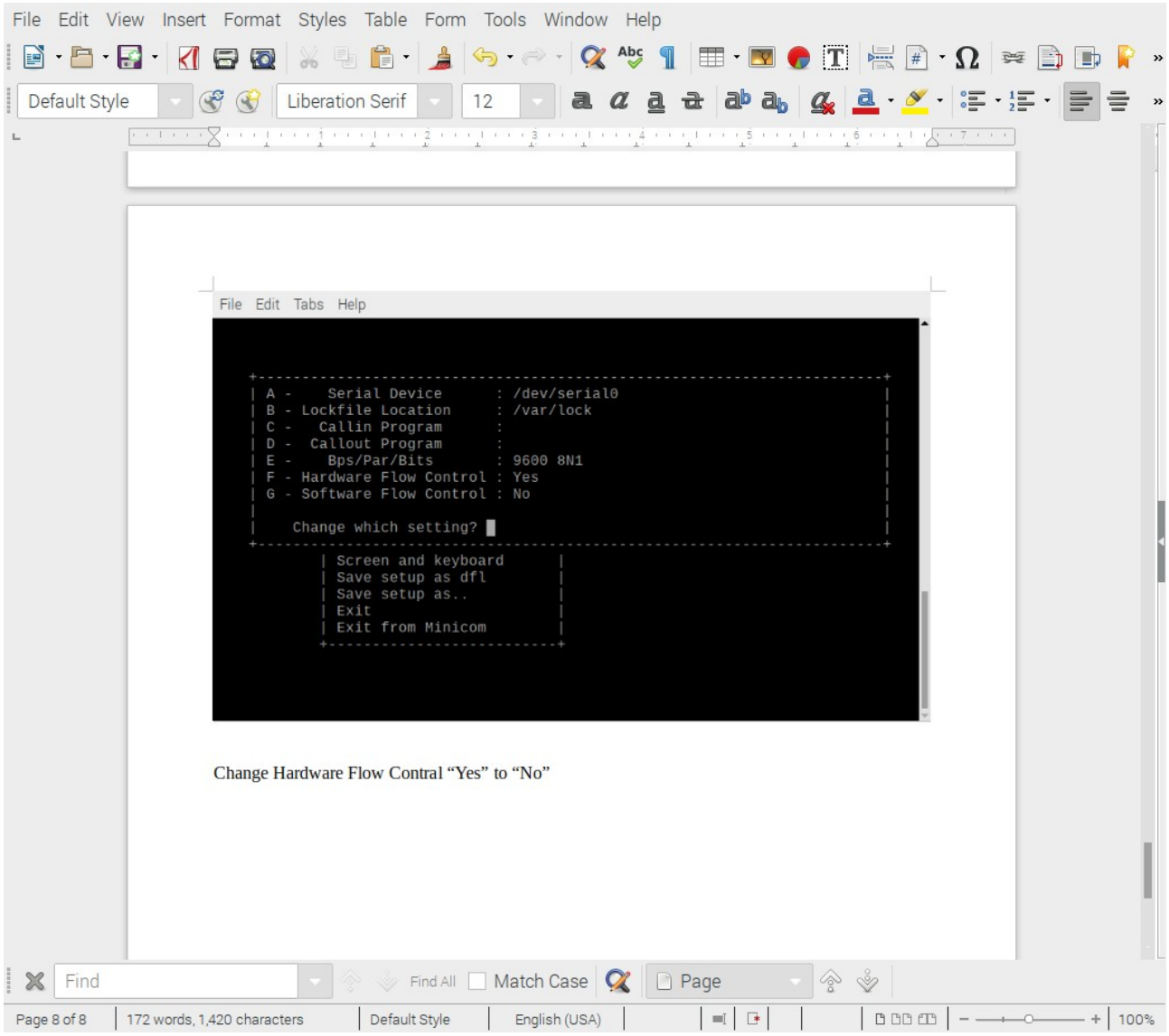
Change “/*dev*/tty8” to “/dev/serial0”.



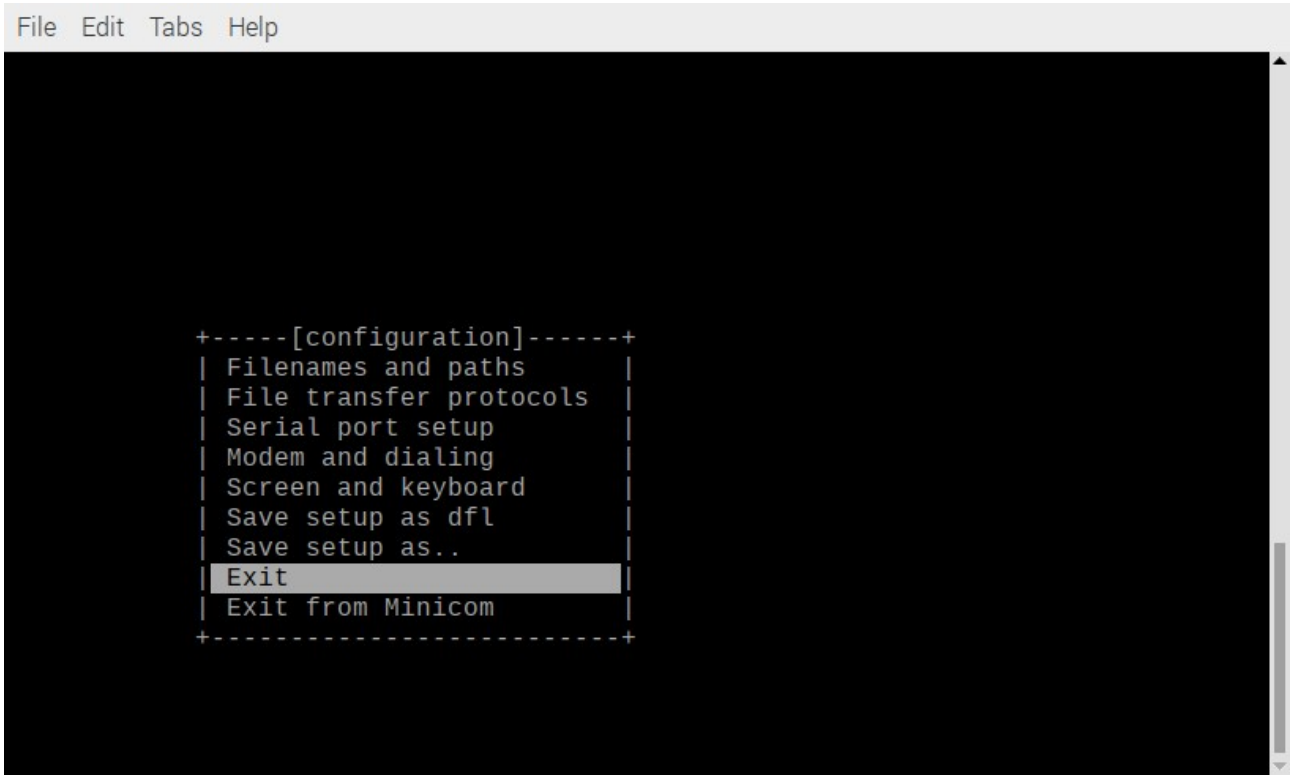
Change “115200 8N1” to “9600 8N1”.



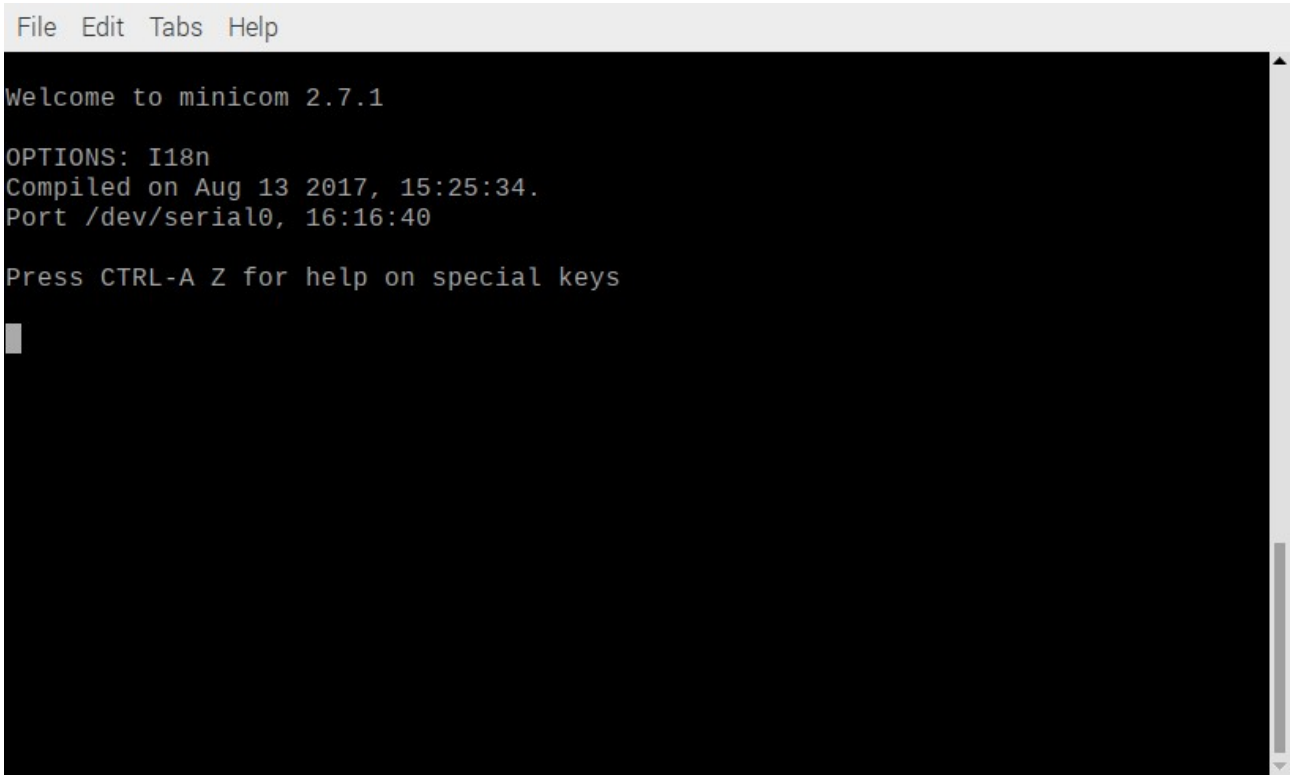
Change Hardware Flow Contral “Yes” to “No”


File Edit View Insert Format Styles Table Form Tools Window Help
Default Style
Liberation Serif
12
File Edit Tabs Help
+---+
| A - Serial Device : /dev/serial0 |
| B - Lockfile Location : /var/lock |
| C - Callin Program : |
| D - Callout Program : |
| E - Bps/Par/Bits : 9600 8N1 |
| F - Hardware Flow Control : Yes |
| G - Software Flow Control : No |
| |
| Change which setting? |
+---+
| Screen and keyboard |
| Save setup as dfl |
| Save setup as.. |
| Exit |
| Exit from Minicom |
+-------------------------+
Change Hardware Flow Contral “Yes” to “No”
Find
Find All
Match Case
Page
Page 8 of 8
172 words, 1,420 characters
Default Style
English (USA)
100%

Enter


File Edit Tabs Help
+-----[configuration]------+
| Filenames and paths |
| File transfer protocols |
| Serial port setup |
| Modem and dialing |
| Screen and keyboard |
| Save setup as dfl |
| Save setup as.. |
| Exit |
| Exit from Minicom |
+--------------------------+

Select Exit


File Edit Tabs Help
Welcome to minicom 2.7.1
OPTIONS: I18n
Compiled on Aug 13 2017, 15:25:34.
Port /dev/serial0, 16:16:40
Press CTRL-A Z for help on special keys