QEMU Ultibo Bare Metal
TextEditor
07/23/21

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

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

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"**

Requires Ultibo RTL installed with ultiboinstaller.sh

ultibo/core/fpc/source/rtl/ultibo/core/globalconst.pas

```
{Global constants}
const
 {Version constants}
 ULTIBO_RELEASE_DATE           = '21 July 2021';
 ULTIBO_RELEASE_NAME            = 'Beetroot';
 ULTIBO_RELEASE_VERSION         = '2.1.079';
 ULTIBO_RELEASE_VERSION_MAJOR   = 2;
 ULTIBO_RELEASE_VERSION_MINOR   = 1;
 ULTIBO_RELEASE_VERSION_REVISION = 079;
```
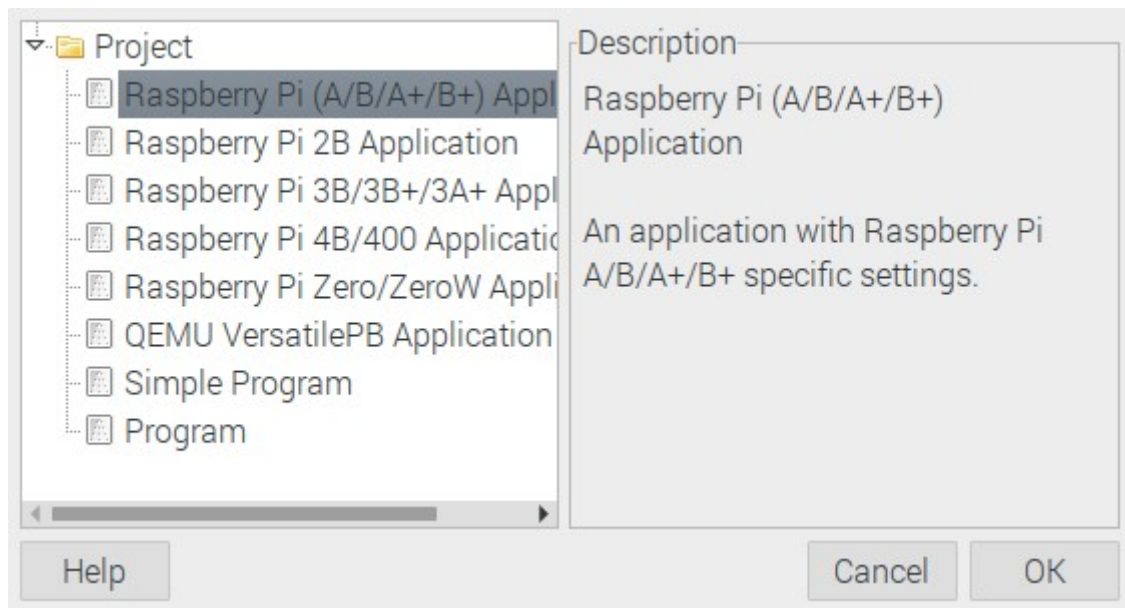
Select QEMU VersatilePB Application.
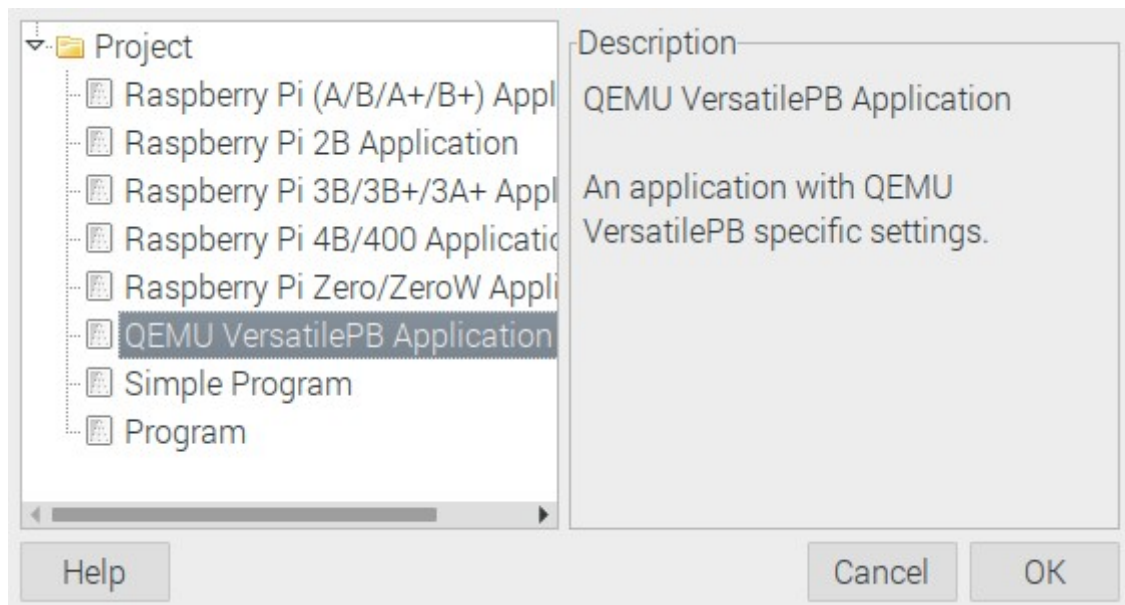
Depress OK
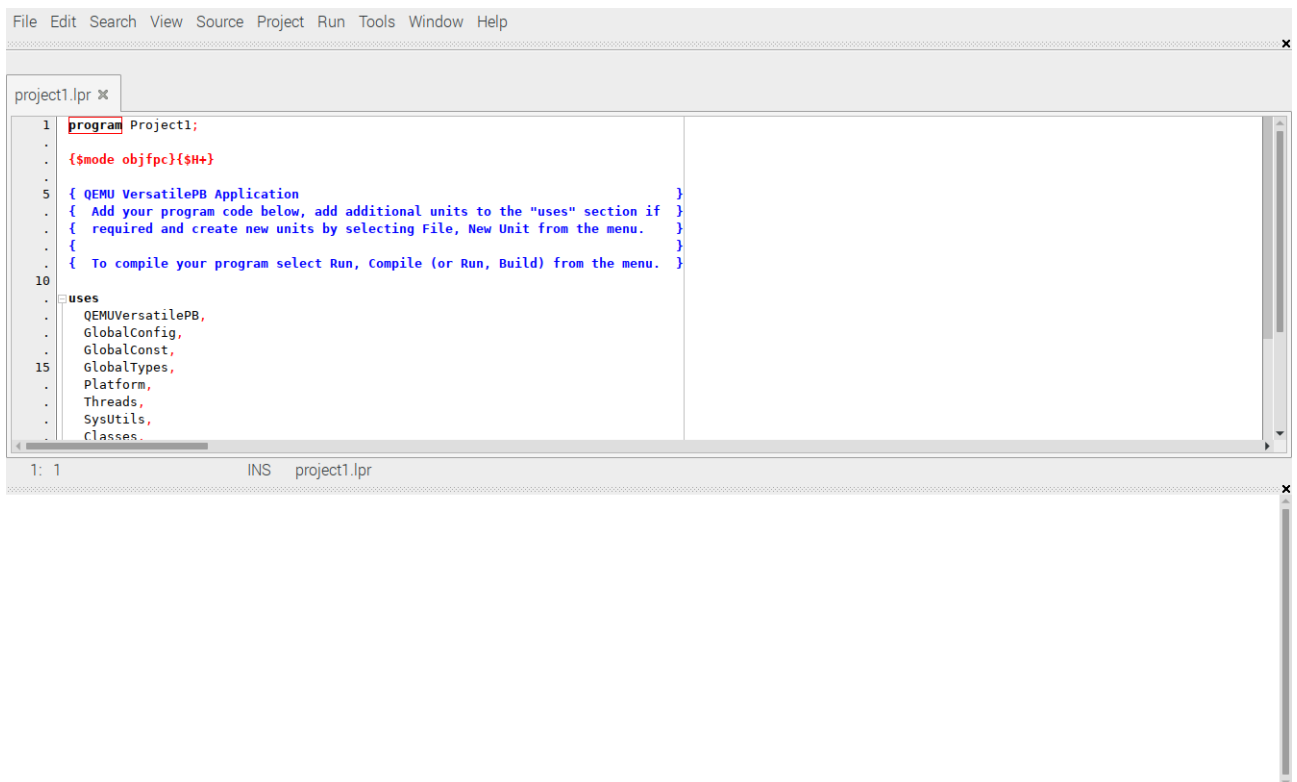
Paste The contents of Examples/17-TextEditor/QEMU/TextEditor.lpr
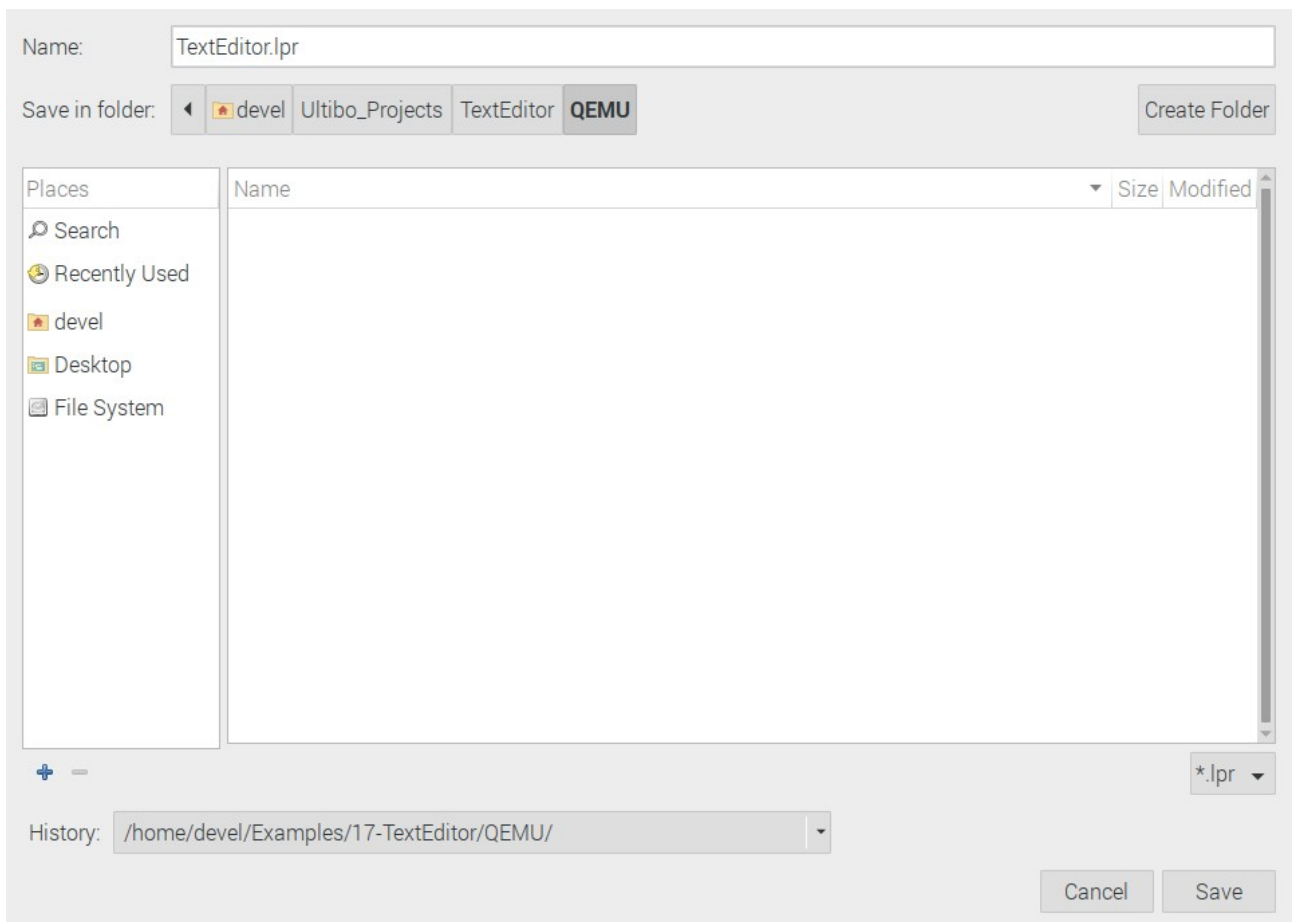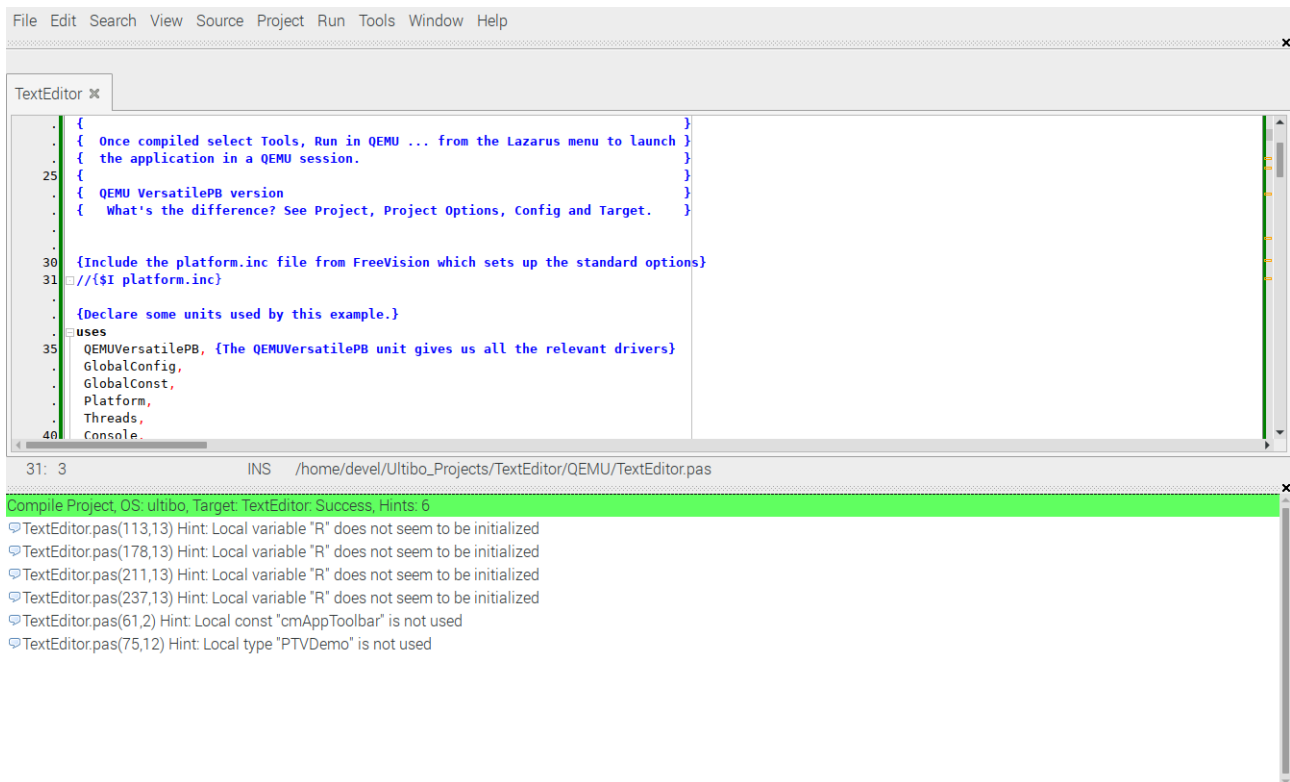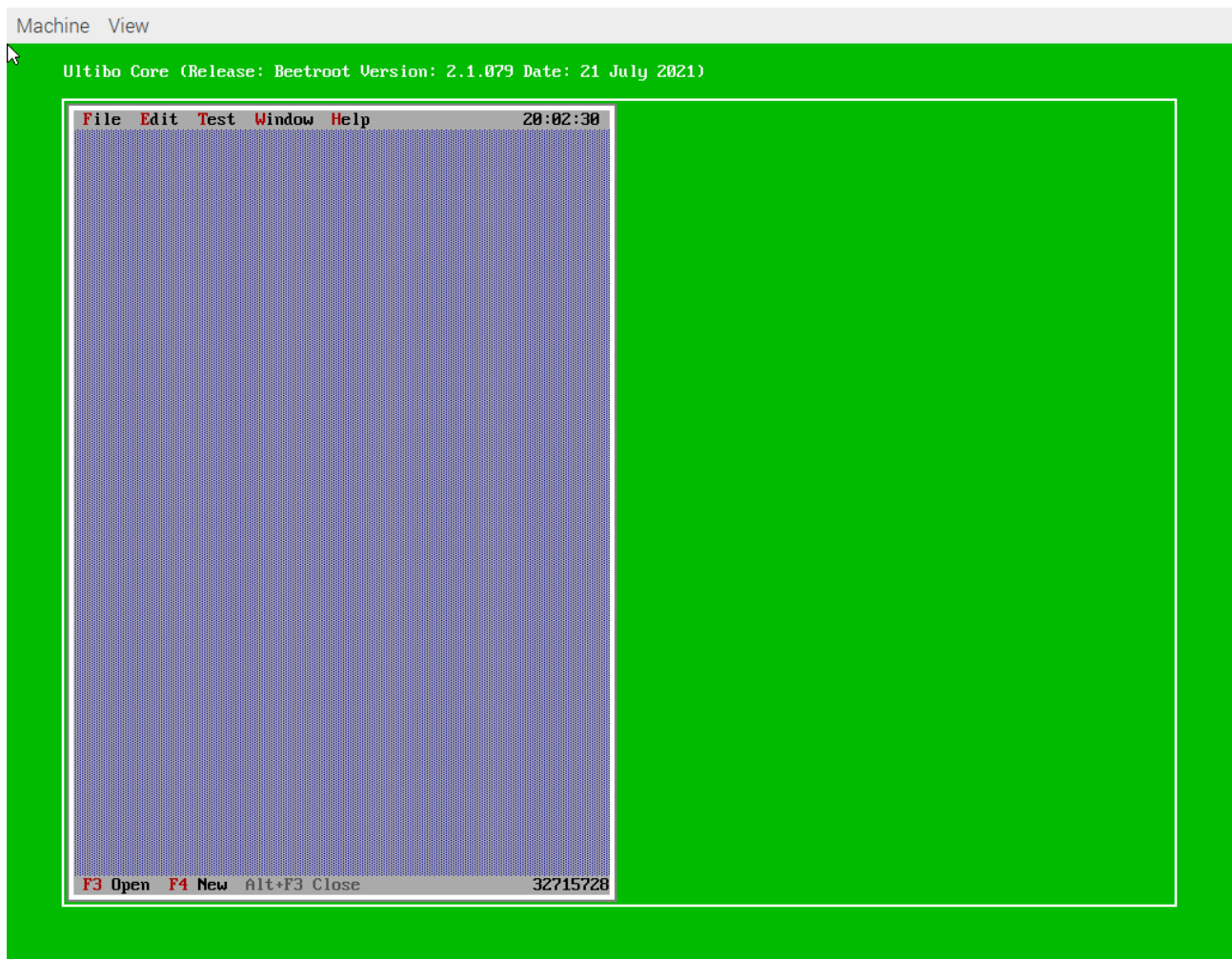

File/Save As Depress Save

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

File Edit Search View Source Project Run Tools Window Help

TextEditor ✖

```
   .   {                                                               }
   .   {  Once compiled select Tools, Run in QEMU ... from the Lazarus menu to launch }
   .   {  the application in a QEMU session.                           }
  25   {                                                               }
   .   {  QEMU VersatilePB version                                     }
   .   {   What's the difference? See Project, Project Options, Config and Target.   }
   .
   .
  30   {Include the platform.inc file from FreeVision which sets up the standard options}
  31   //{$I platform.inc}
   .
   .   {Declare some units used by this example.}
   .   uses
  35   QEMUVersatilePB, {The QEMUVersatilePB unit gives us all the relevant drivers}
   .   GlobalConfig,
   .   GlobalConst,
   .   Platform,
   .   Threads,
  40   Console.
```

31: 3   INS   /home/devel/Ultibo_Projects/TextEditor/QEMU/TextEditor.pas

Compile Project, OS: ultibo, Target: TextEditor: Success, Hints: 6
TextEditor.pas(113,13) Hint: Local variable "R" does not seem to be initialized
TextEditor.pas(178,13) Hint: Local variable "R" does not seem to be initialized
TextEditor.pas(211,13) Hint: Local variable "R" does not seem to be initialized
TextEditor.pas(237,13) Hint: Local variable "R" does not seem to be initialized
TextEditor.pas(61,2) Hint: Local const "cmAppToolbar" is not used
TextEditor.pas(75,12) Hint: Local type "PTVDemo" is not used

qemu-system-arm -machine versatilepb -cpu cortex-a8 -kernel kernel.bin -drive
file=disk.img,if=sd,format=raw

Machine   View

Ultibo Core (Release: Beetroot Version: 2.1.079 Date: 21 July 2021)

```
 File  Edit  Test  Window  Help                    20:02:30




















 F3 Open  F4 New  Alt+F3 Close                     32715728
```

New Text file

Machine   View

Ultibo Core (Release: Beetroot Version: 2.1.079 Date: 21 July 2021)

```
 File  Edit  Test  Window  Help              20:09:53
┌──────────────────── Untitled ════════════════════[
│ New               created on disk.img using
│ Open...      F3
│ Save         F2
│ Save as...
│ Save all
│
│ Change dir...
│ OS shell
│ Exit       Alt+X
└────────────────
```

```
├M═════ 2:19 ═════◄
```

```
                                         32720860
```
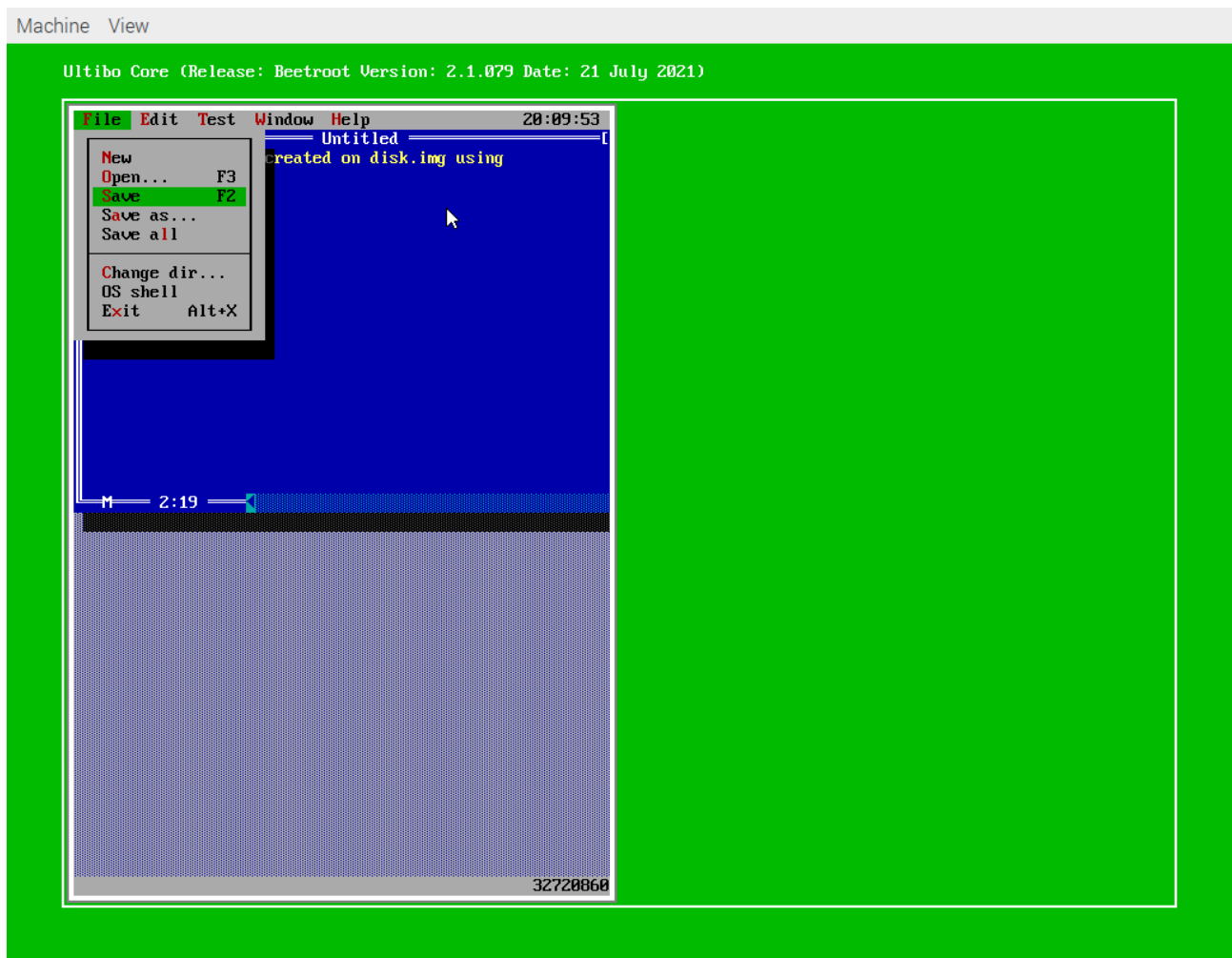
Saving to test1.txt

Depress OK,