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

QEMU Ultibo Bare Metal
TextEditor
07/23/21

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

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

QEMU is a <ins>hosted virtual machine monitor</ins>: it emulates the machine's <ins>processor</ins> through dynamic <ins>binary translation</ins> and provides a set of different hardware and device models for the machine, enabling it to run a variety of <ins>guest operating systems</ins>. It also can be used with <ins>Kernel-based Virtual Machine</ins> (KVM) to run virtual machines at near-native speed (by taking advantage of hardware extensions such as <ins>Intel VT-x</ins>). 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.
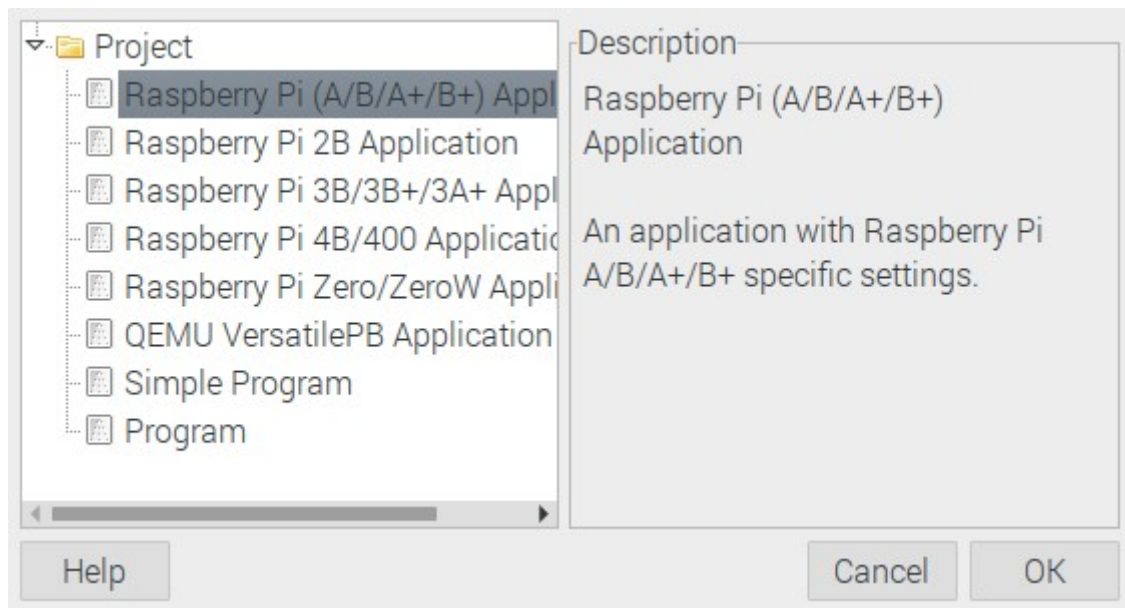
/usr/bin/qemu-img /usr/bin/qemu-nbd   /usr/bin/qemu-system-aarch64
/usr/bin/qemu-io /usr/bin/qemu-pr-helper /usr/bin/qemu-system-arm

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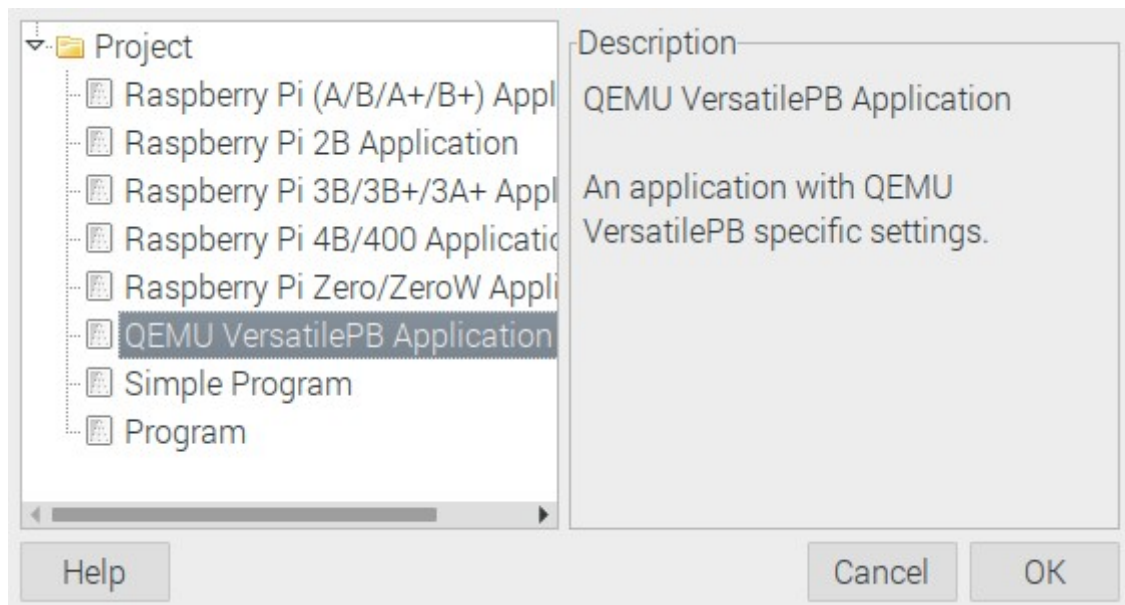
Requires Ultibo RTL installed with ultiboinstaller.sh

ultibo/core/fpc/source/rtl/ultibo/core/globalconst.pas
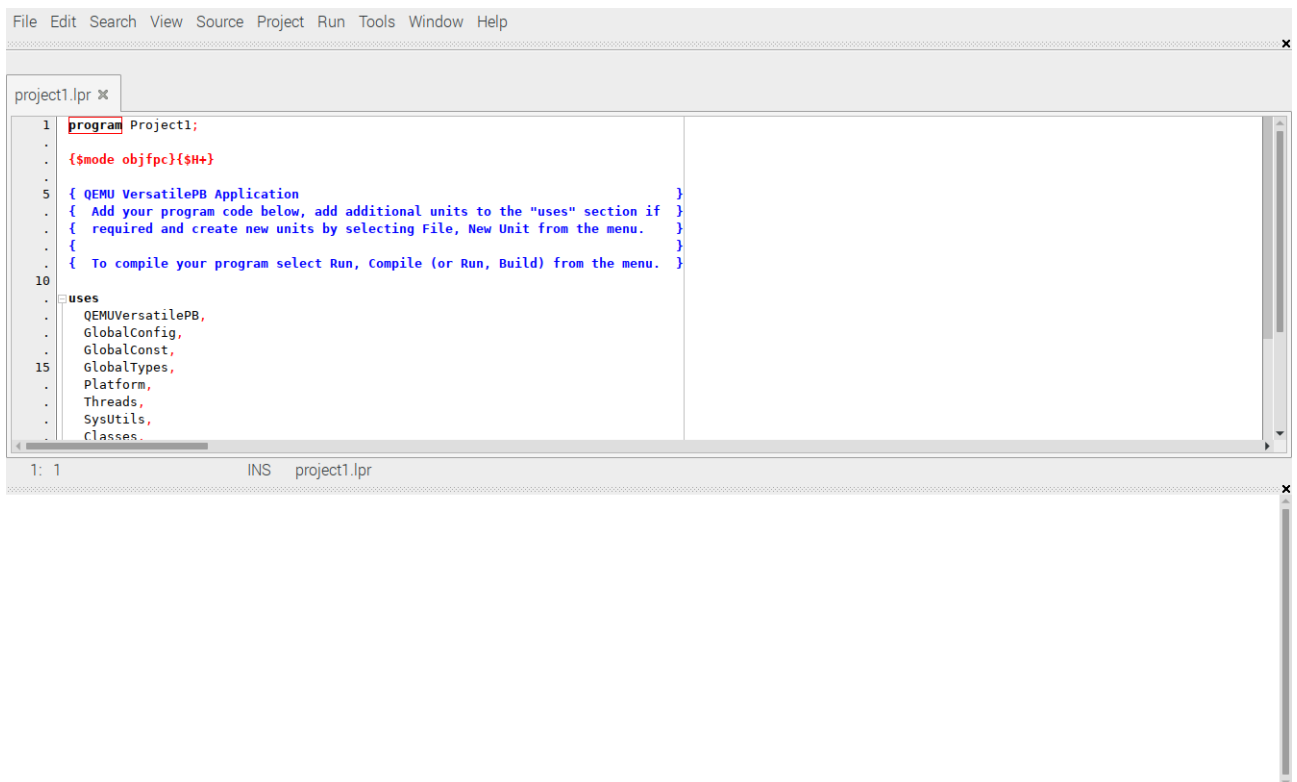
```
{Global constants}
const
 {Version constants}
 ULTIBO_RELEASE_DATE          = '21 July 2021';
 ULTIBO_RELEASE_NAME           = 'Beetroot';
 ULTIBO_RELEASE_VERSION        = '2.1.079';
 ULTIBO_RELEASE_VERSION_MAJOR   = 2;
 ULTIBO_RELEASE_VERSION_MINOR   = 1;
 ULTIBO_RELEASE_VERSION_REVISION = 079;
```
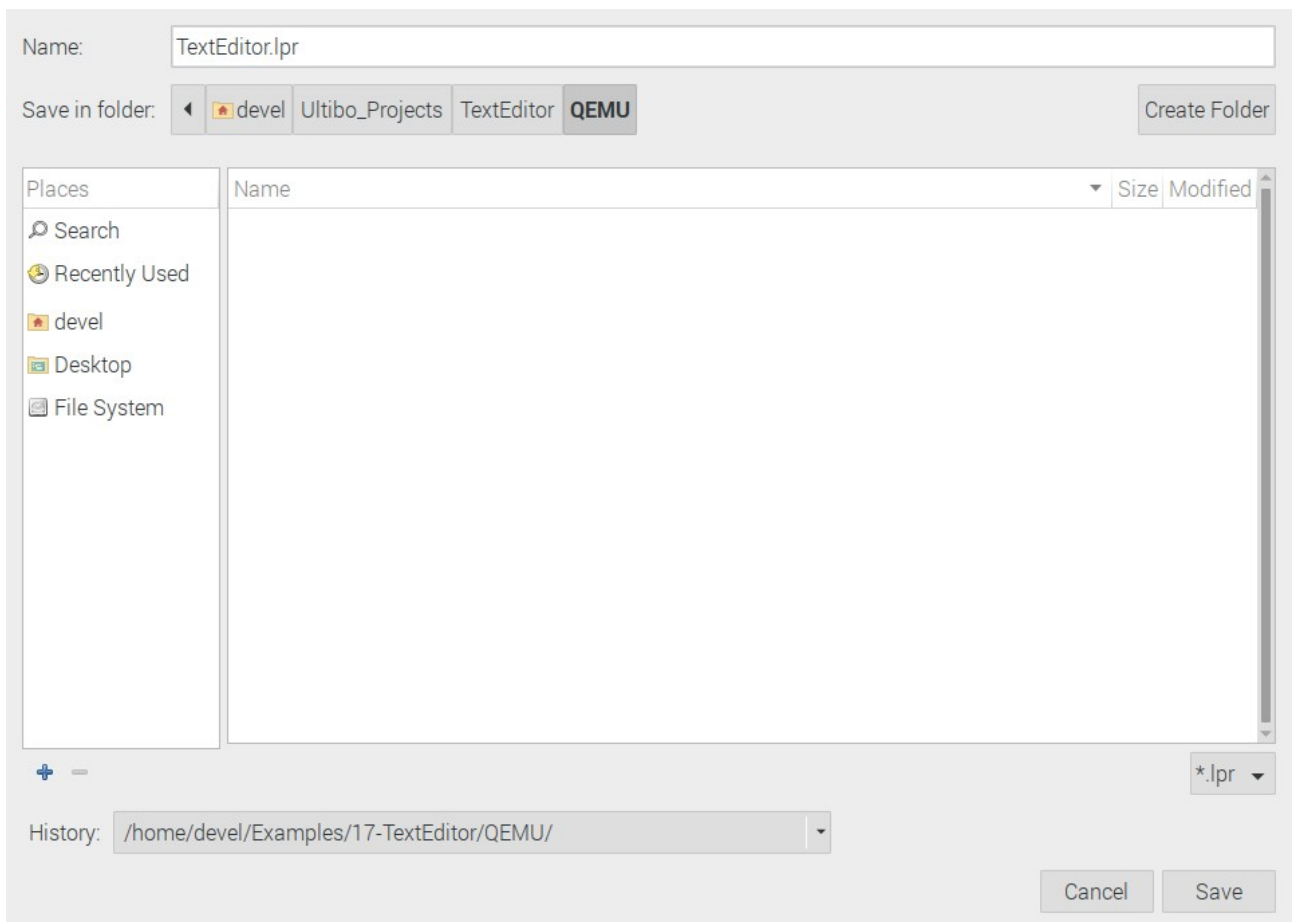
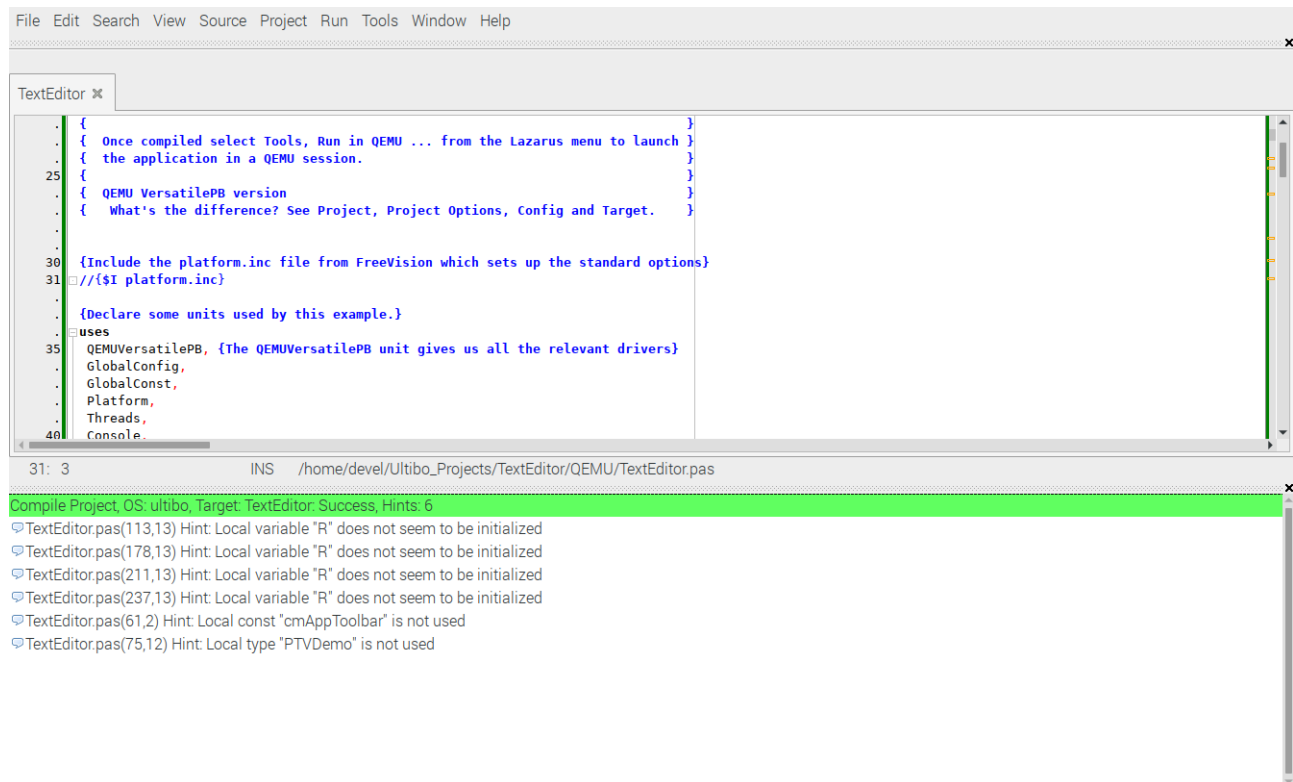Select QEMU VersatilePB Application.

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File Edit Search View Source Project Run Tools Window Help

project1.lpr ✕

```
1   program Project1;
.
.   {$mode objfpc}{$H+}
.
5   { QEMU VersatilePB Application                                    }
.   {  Add your program code below, add additional units to the "uses" section if  }
.   {  required and create new units by selecting File, New Unit from the menu.   }
.   {                                                                }
.   {  To compile your program select Run, Compile (or Run, Build) from the menu.  }
10
.   uses
.     QEMUVersatilePB,
.     GlobalConfig,
.     GlobalConst,
15    GlobalTypes,
.     Platform,
.     Threads,
.     SysUtils,
.     Classes,
```

1: 1   INS   project1.lpr

Paste The contents of Examples/17-TextEditor/QEMU/TextEditor.lpr

Name: TextEditor.lpr

Save in folder: ◀ 🏠 devel | Ultibo_Projects | TextEditor | **QEMU**   Create Folder

Places
🔍 Search
🕐 Recently Used
🏠 devel
🖥 Desktop
💾 File System

Name   ▼ Size Modified

                                                        *.lpr ▾

History: /home/devel/Examples/17-TextEditor/QEMU/   ▾

                                                Cancel   Save

File/Save As Depress Save

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

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