This tutorial teaches how to build Linux distributions as screensavers for Microsoft Windows, with your choice of boot screen and wallpaper. The intent of this is to construct items containing your logos which can be distributed as marketing novelties. Most businesses have controls as to when their logos can be used, so be sure to get the permission you need.

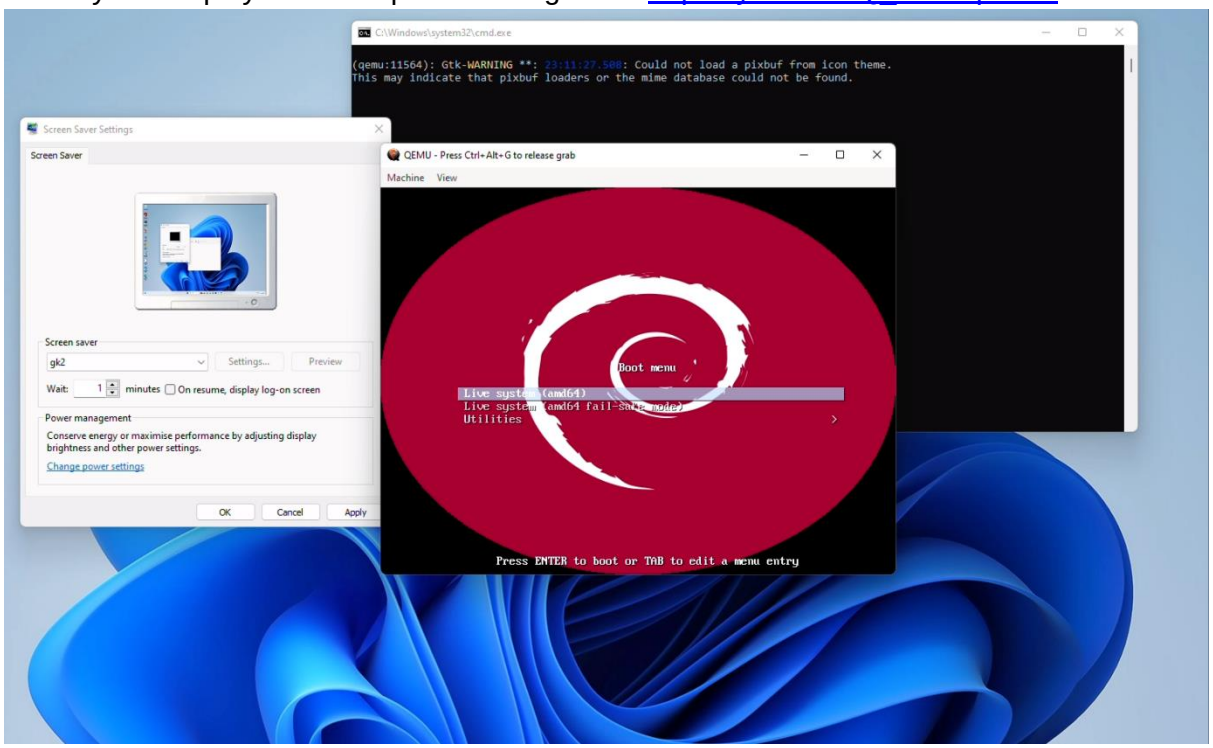
All required software and data is open source and is accessible on the public Internet.

Hardware requirement: A PC running Windows 10 or newer which is capable of running WSL2. WSL2 only runs on some CPUs and requires a BIOS setting to enable virtualization.

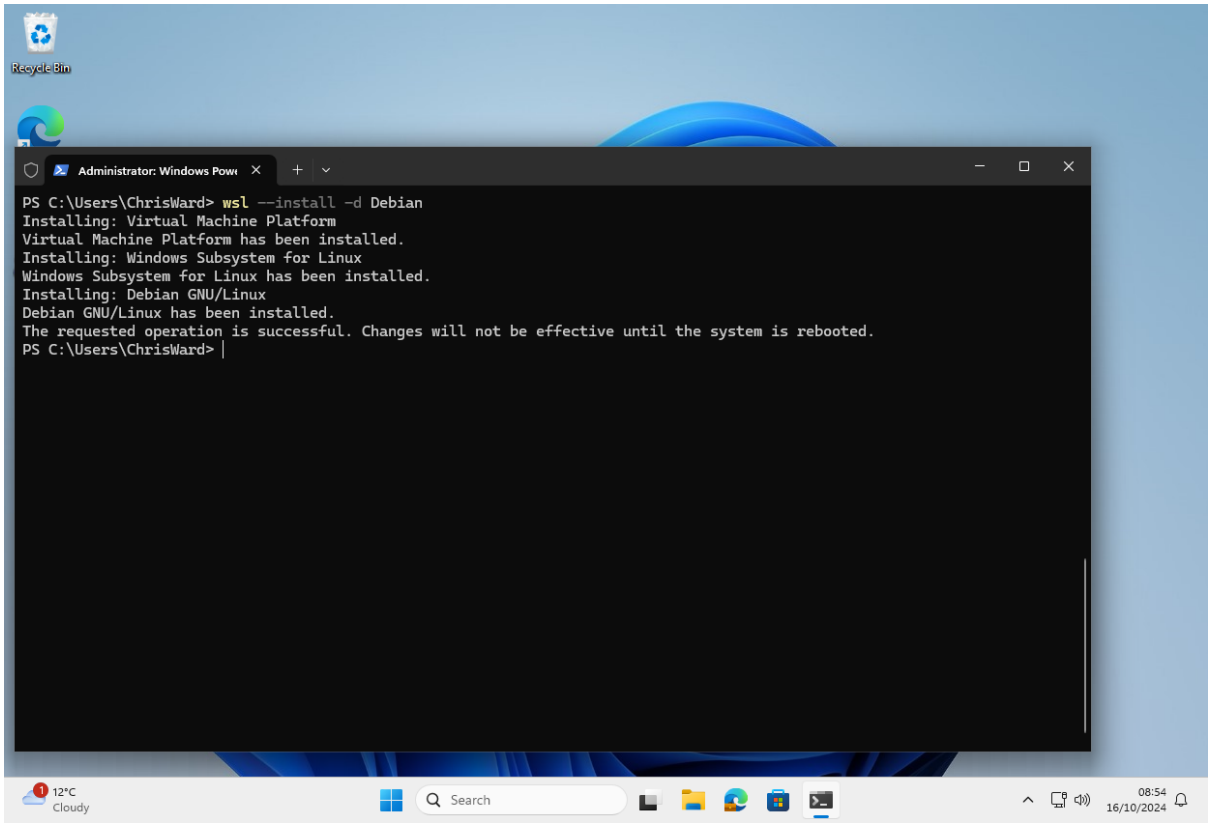
Internet requirement You will download up to 10 GB of data in all cases, and up to 100GB of data if you choose to download all the source code.

The required SVG (scalable vector graphic) files can be edited with Inkscape, an open source item available for Linux, Apple Mac, and Microsoft Windows; or with commercial products such as sold by Adobe.

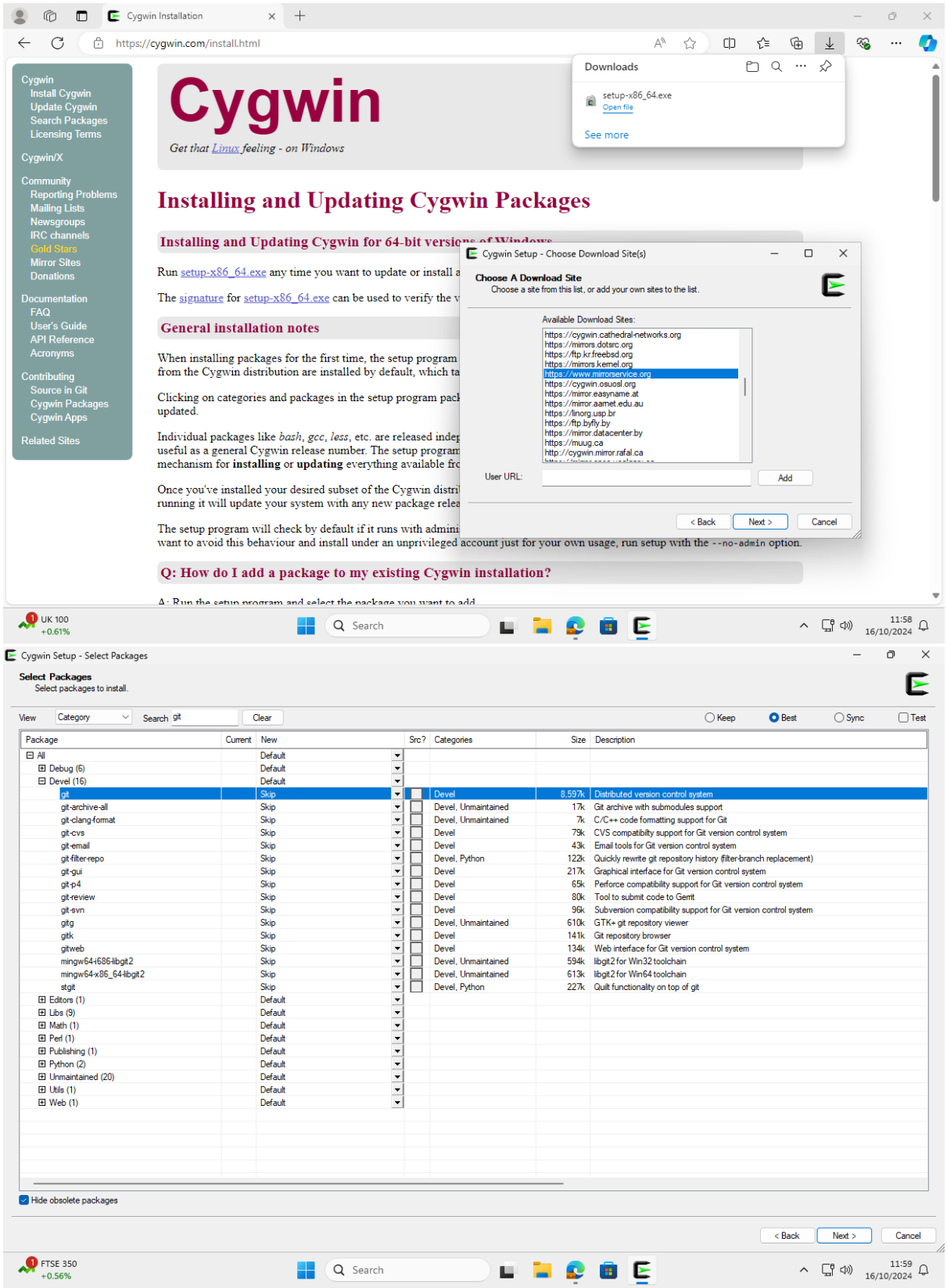
I set up a screensaver with a Debian logo, because the screensaver is a Debian Linux https://www.debian.org/logos/ . Here is a video from the screensaver kicking in to the point where you can play with the open source games https://youtu.be/Q_n39c8pUGw



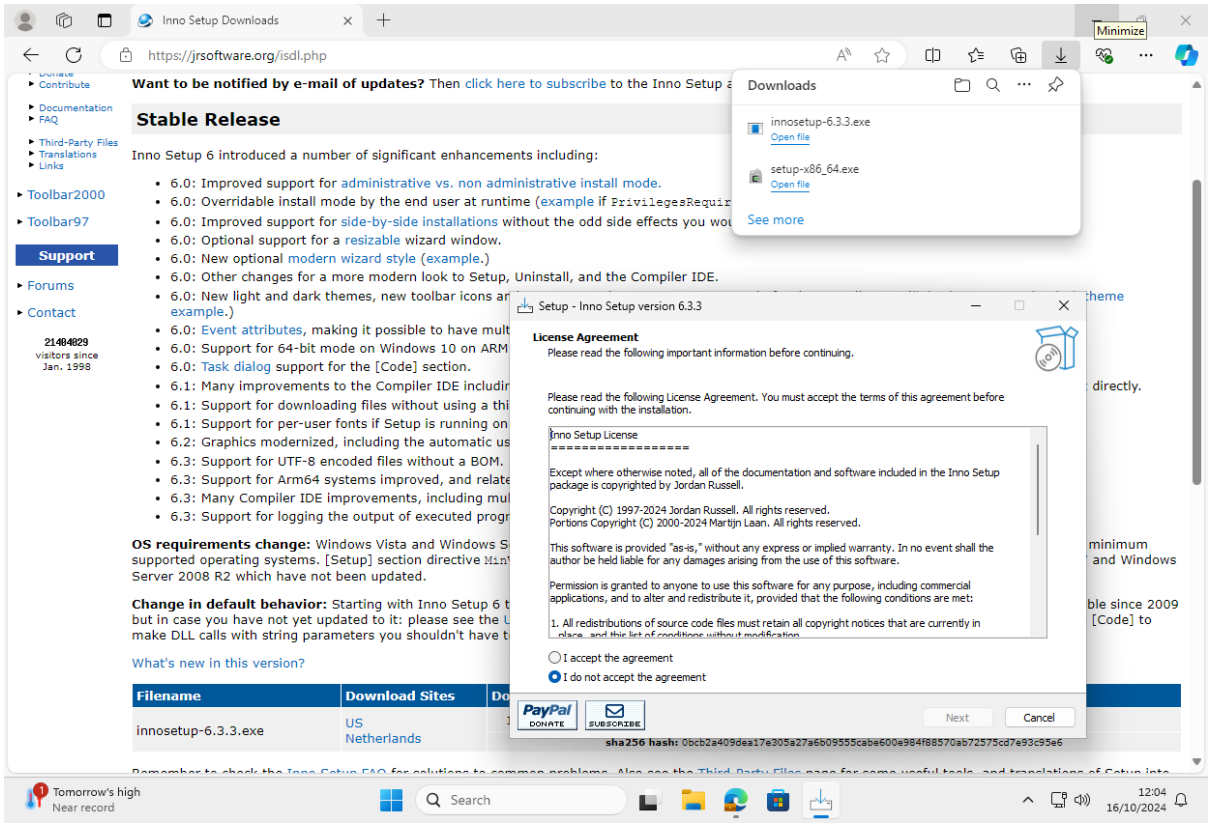
Install WSL2 with Debian



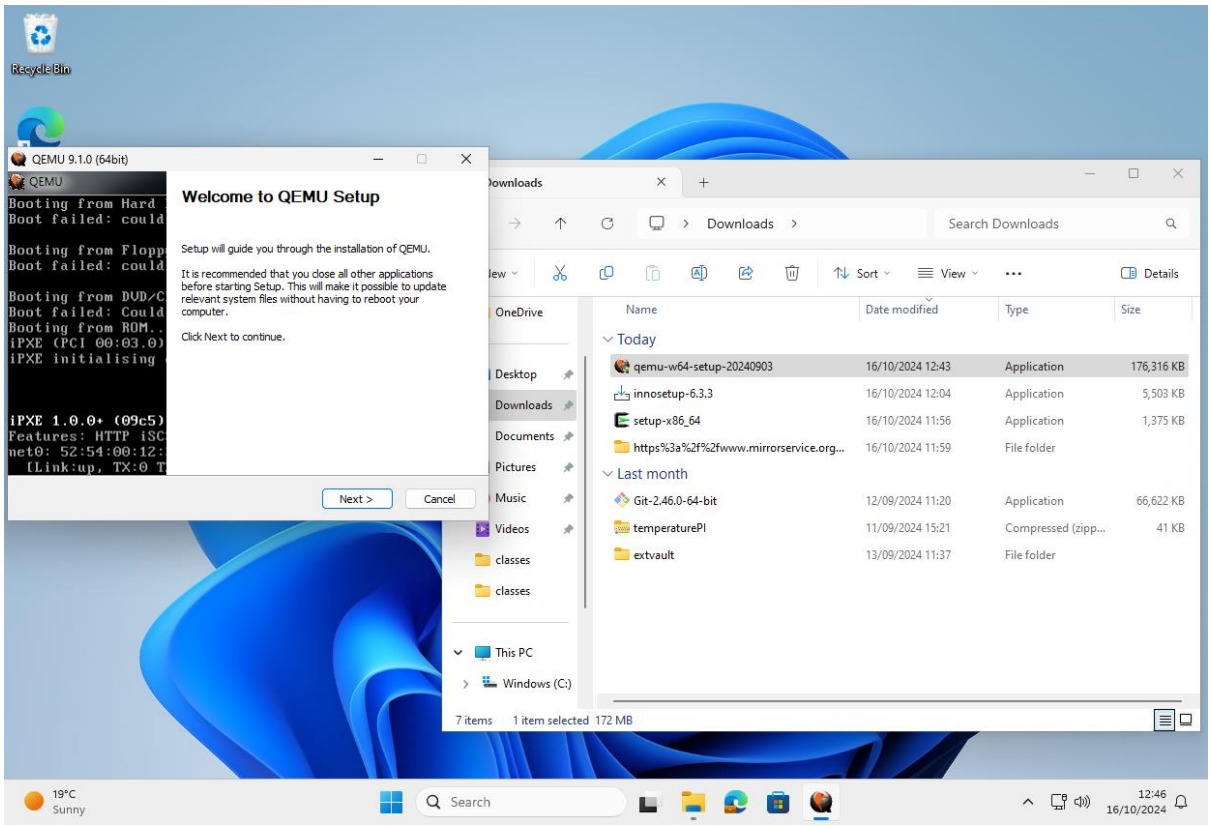
Install cygwin from https://cygwin.com/ with git



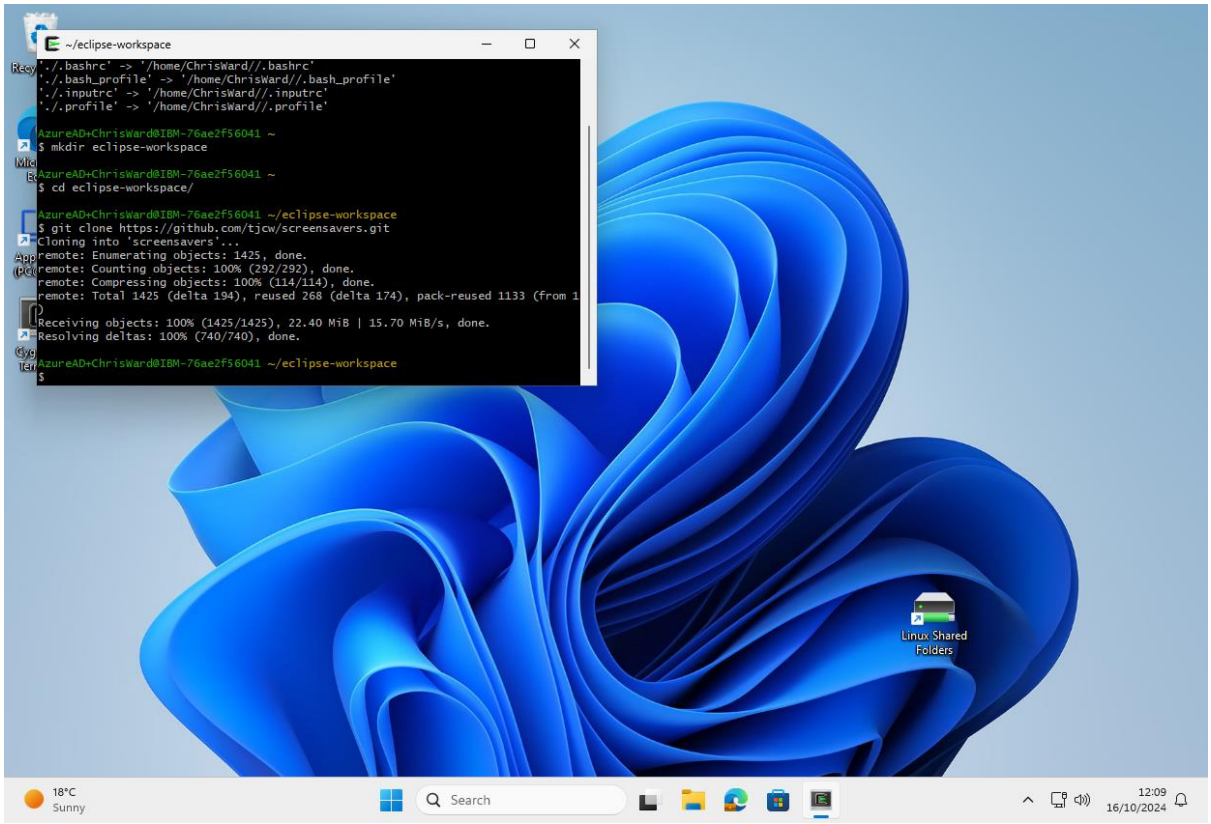
Install Inno Setup from https://jrsoftware.org/isinfo.php



Install Qemu for Windows from https://qemu.weilnetz.de/w64/

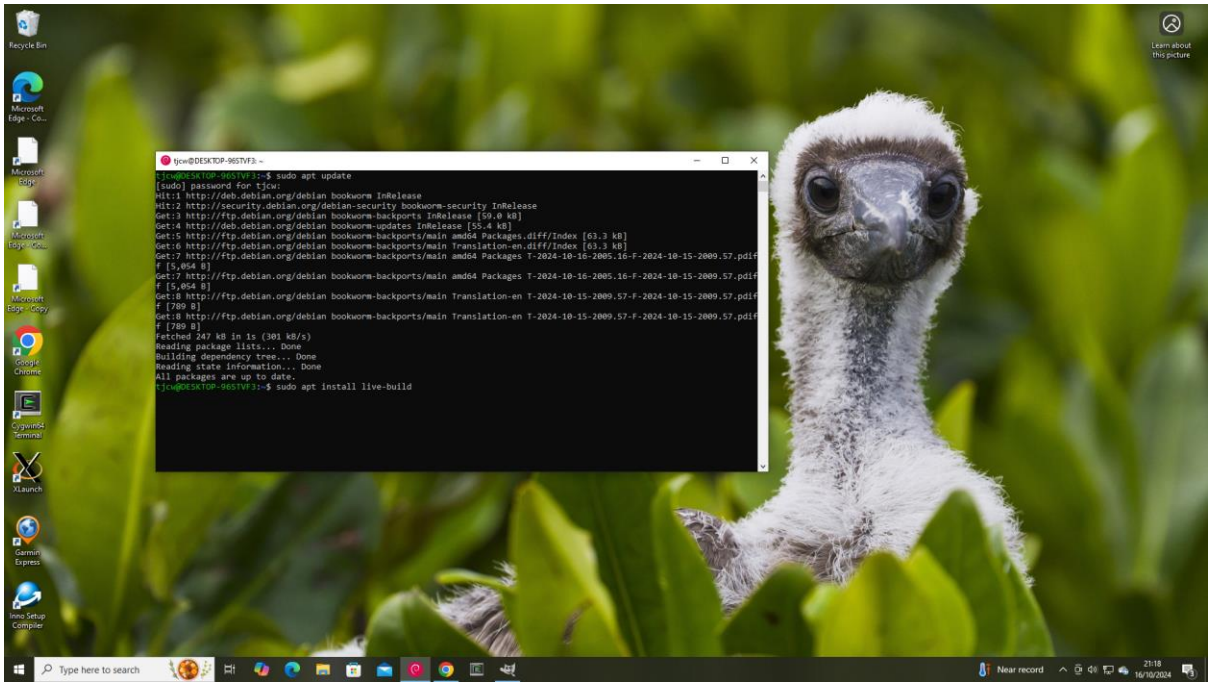


Clone my repository https://github.com/tjcw/screensavers.git under cygwin



Clone my repository https://github.com/tjcw/screensavers.git under WSL2 into directory ~/eclipse-workspace/
$ mkdir ~/eclipse-workspace;cd ~/eclipse-workspace; git clone https://github.com/tjcw/screensavers.git

Install ‘live-build’ under WSL2 $ sudo apt install live-build



```
tjcw@DESKTOP-96STVF3 ~
$ cd eclipse-workspace/

tjcw@DESKTOP-96STVF3 ~/eclipse-workspace
$ cd screensavers/

tjcw@DESKTOP-96STVF3 ~/eclipse-workspace/screensavers
$ cd packaging/

tjcw@DESKTOP-96STVF3 ~/eclipse-workspace/screensavers/packaging
$ mkdir qemu

tjcw@DESKTOP-96STVF3 ~/eclipse-workspace/screensavers/packaging
$  cp -r "/cygdrive/c/Program Files/qemu/." qemu
tjcw@DESKTOP-96STVF3 ~/eclipse-workspace/screensavers/packaging
$ ./package-qemu-open.sh >fr2-open.iss

tjcw@DESKTOP-96STVF3 ~/eclipse-workspace/screensavers/packaging
$
```

Customise the selection of software to go in the isos (WSL2 commands). There are approximately 65000 packages available in Debian Linux. I chose a few thousand packages for each of 2 screensavers, one with an educational theme and one with an open source games theme.

tjcw@DESKTOP-96STVF3:~/lb$ vi ~/eclipse-workspace/screensavers/lb-package-lists/freeduc-bookworm.list.chroot

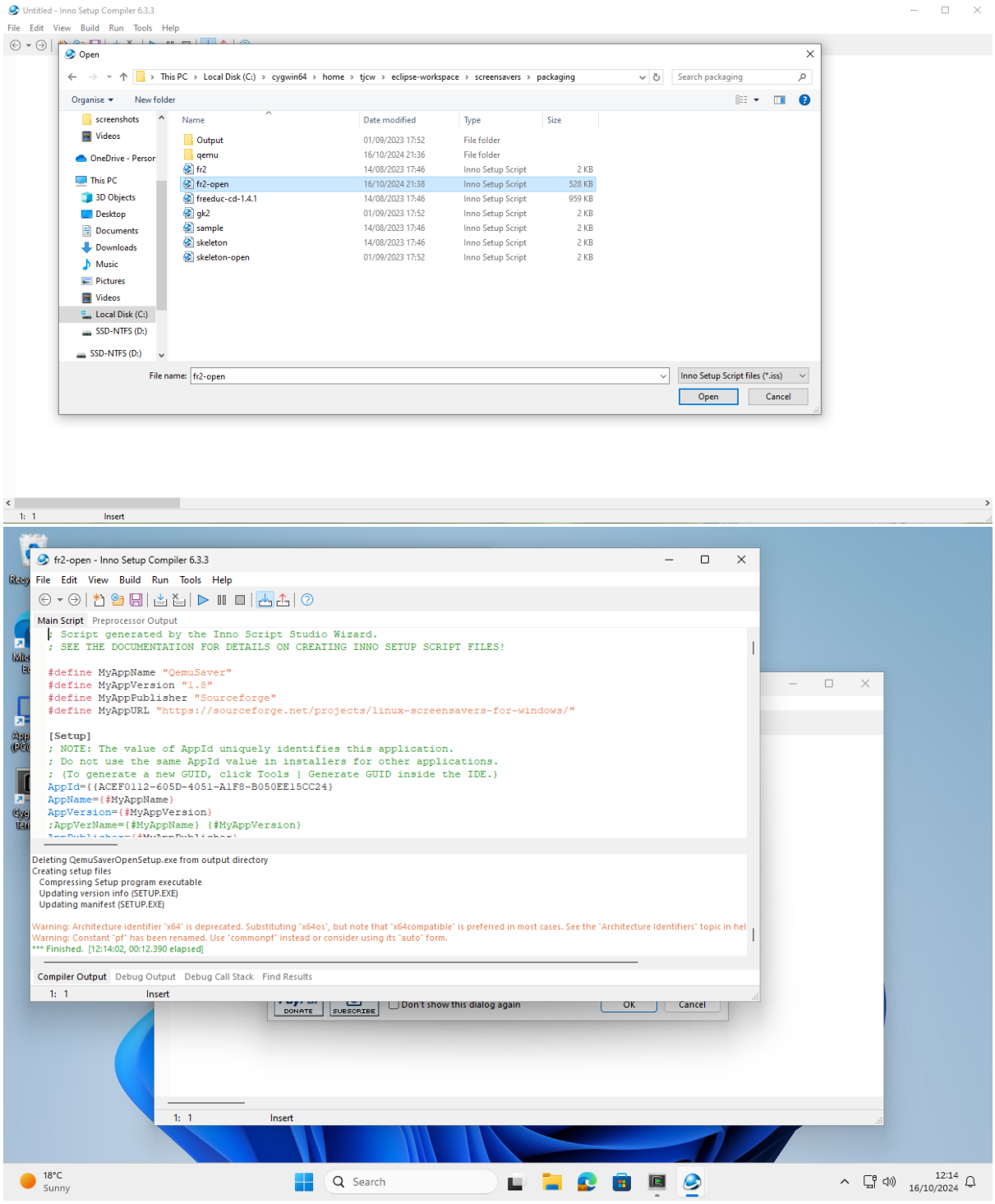
tjcw@DESKTOP-96STVF3:~/lb$ vi ~/eclipse-workspace/screensavers/lb-package-lists/gk-bookworm.list.chroot

Copy in the SVG files to be used as boot splash screen and wallpaper
tjcw@DESKTOP-96STVF3:~/eclipse-workspace/screensavers$ cp splash.svg svgs/splash.svg
tjcw@DESKTOP-96STVF3:~/eclipse-workspace/screensavers$ cp wallpaper.svg content/common-files/home/user/face

Run ‘build-both’ under WSL2 to generate the isos
tjcw@DESKTOP-96STVF3:~/lb$ sudo ~/eclipse-workspace/screensavers/bin/build-both

Set up the install script for Inno Setup (Cygwin commands)

Run Inno Setup to create the installers

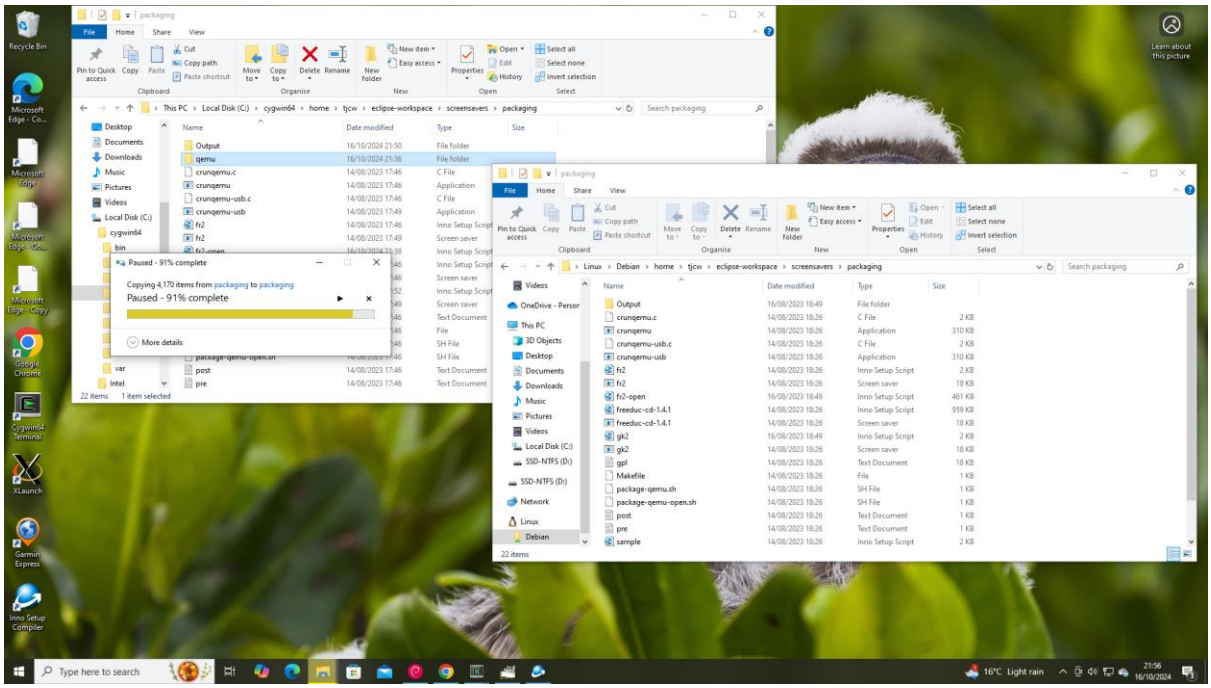


After opening ‘fr2.iss’, choose ‘Build/Compile’.
Transfer the installers and ‘Qemu for Windows’ to WSL2

```
tjcw@DESKTOP-96STVF3:~/assembly/QemuSaverOpen/unzip$ zip -r
../QemuSaverOpen.zip .
tjcw@DESKTOP-96STVF3:~/assembly/GamesKnoppix2/unzip$ zip -r
../GamesKnoppix2.zip .
```

```
mv ~/eclipse-workspace/screensavers/packaging/qemu
~/assembly/QemuSaverOpen/unzip/
cp ~/eclipse-workspace/screensavers/packaging/Output/QemuSaverOpenSetup.exe
~/assembly/QemuSaverOpen/unzip/
cp ~/eclipse-workspace/screensavers/packaging/fr2.scr
~/assembly/QemuSaverOpen/unzip/extras/
ln ~/lb/isos/freeduc-bookworm.iso ~/assembly/QemuSaverOpen/unzip/extras/fr2.iso

cp ~/eclipse-workspace/screensavers/packaging/Output/GamesKnoppix2Setup.exe
~/assembly/GamesKnoppix2/unzip/
cp ~/eclipse-workspace/screensavers/packaging/gk2.scr
~/assembly/GamesKnoppix2/unzip/extras/
ln ~/lb/isos/gk-bookworm.iso ~/assembly/GamesKnoppix2/unzip/extras/gk2.iso
tjcw@DESKTOP-96STVF3:~/eclipse-workspace/screensavers/bin$
```



Set up the unzipped files by running “setup_assembly”

Zip up the ISOs, the installers, and ‘QEMU for Windows’

Transfer the zip files from WSL2 to Windows

Test

Extract each zip file and run the installer exes. Sometimes the installers are detected as malware. They aren't malware, so if necessary add the QemuSaverOpen and GamesKnoppix2 directories to the exclusion list.
Go to screensaver settings and select fr2 or gk2.

Source code

Optionally, run '~/eclipse-workspace/bin/fetch_source' to fetch the source code for all components. You will need the source code if you propose to distribute the screensavers, as recipients may ask you for it. 'fetch-source' will download more than 100 GB of data, which may stress the available internet connection.

```
#!/bin/bash
# Fetch the qemu source
git clone https://repo.or.cz/qemu/ar7.git
# Fetch the inno setup source
git clone https://github.com/jrsoftware/issrc.git
# Fetch the rufus source
git clone https://github.com/pbatard/rufus.git
# Fetch the Debian source
iso_dir=http://cdimage.debian.org/debian-cd/current/source/iso-dvd
wget ${iso_dir}/SHA512SUMS
while read sha512 name
do
  wget ${iso_dir}/${name}
done <SHA512SUMS
# Check the checksums
sha512sum -c SHA512SUMS#!/bin/bash
# Fetch the qemu source
git clone https://repo.or.cz/qemu/ar7.git
# Fetch the inno setup source
git clone https://github.com/jrsoftware/issrc.git
# Fetch the rufus source
git clone https://github.com/pbatard/rufus.git
# Fetch the Debian source
iso_dir=http://cdimage.debian.org/debian-cd/current/source/iso-dvd
wget ${iso_dir}/SHA512SUMS
while read sha512 name
do
  wget ${iso_dir}/${name}
done <SHA512SUMS
# Check the checksums
sha512sum -c SHA512SUMS
```

Bibliography

https://www.researchgate.net/publication/272094609_Linux_screensaver_for_Windows First publication about running Linux as a Windows screensaver

https://www.linux.com/news/linux-as-a-screensaver-for-windows-the-gift-of-open-source-games-and-sboms-for-the-holidays/ Updated publication about running Linux as a Windows screensaver

https://sourceforge.net/projects/linux-screensavers-for-windows/files/release1/ Location on SourceForge where the screensavers in the above article are avaiable for download