itadOS

v.0.0.1

itadOS

Guides

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Contents

Create itadOS ISO

Prerequisites:

- Computer or virtual machine with Debian operating system.
    - The following packages installed:
        - nvme-cli
        - lshw
        - dd (coreutils)
        - hdparm
        - rtcwake (util-linux)
        - mmc-utils
        - whiptail
        - shred (coreutils)
        - smartmontools
        - pciutils
        - fop
        - xsltrpoc
        - live-build
        - isolinux

Helpful links for live-build:

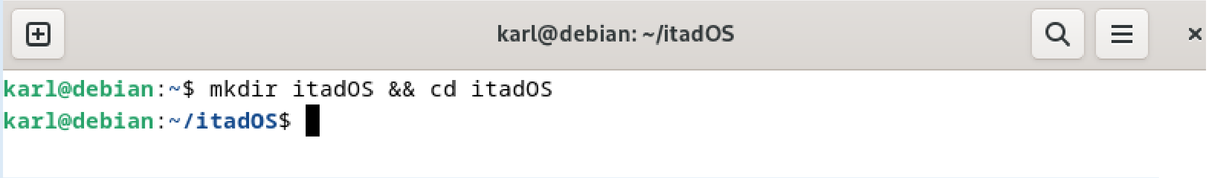
https://debian-install-notes.pages.dev/netinstall/live-build#3

https://manpages.debian.org/testing/live-build/lb_config.1.en.html

Step 1 – Create a directory

- **Create a directory and change directory to it, as an in an example shown in figure 1.1.**

```
mkdir itadOS && cd itadOS
```



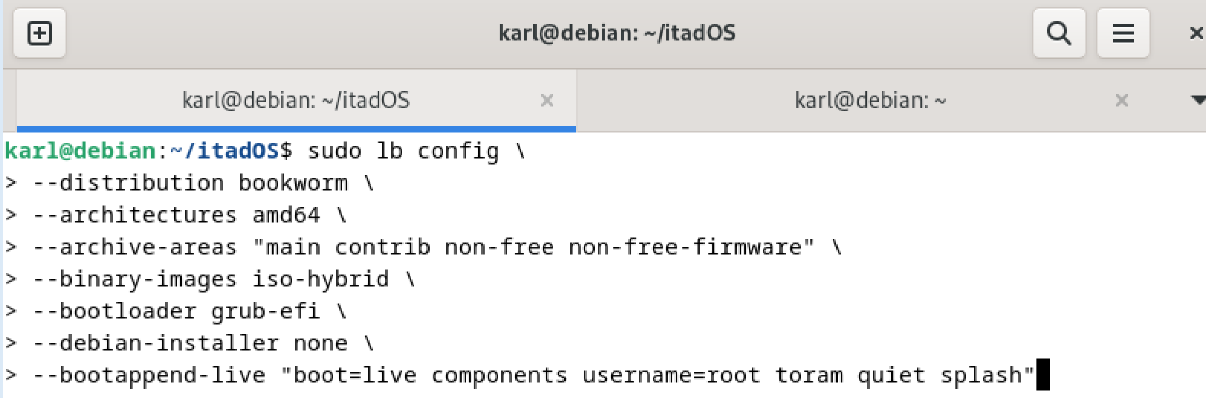
```
karl@debian:~$ mkdir itadOS && cd itadOS
karl@debian:~/itadOS$
```

***Figure 1.1**. Directory created for live-build and directory changed to it.*

Step 2 – Create live-build config directory

- **Enter the following command, as shown in figure 1.2:**

```
sudo lb config --distribution bookworm --architectures amd64 --archive-areas "main contrib non-free non-free-firmware" --binary-images iso-hybrid --bootloader grub-efi --debian-installer none --bootappend-live "boot=live components username=root toram quiet splash"
```



```
karl@debian:~/itadOS$ sudo lb config \
> --distribution bookworm \
> --architectures amd64 \
> --archive-areas "main contrib non-free non-free-firmware" \
> --binary-images iso-hybrid \
> --bootloader grub-efi \
> --debian-installer none \
> --bootappend-live "boot=live components username=root toram quiet splash"
```

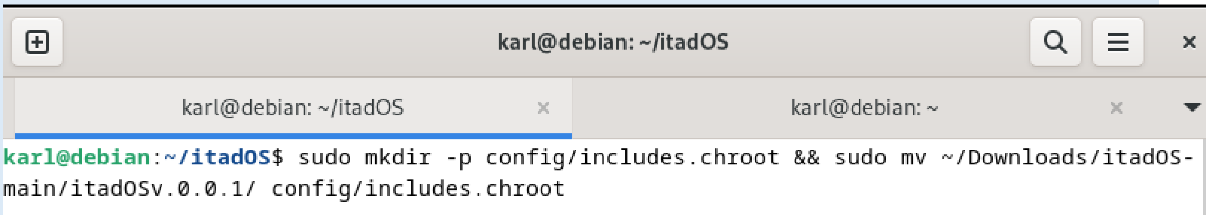
***Figure 1.2**. Live-build config command issued.*

Step 3 – Insert itadOS into live-build

- **Insert itadOS to config/includes.chroot, as shown in figure 1.3.**

(in this example itadOS was downloaded from github: https://github.com/karloismann/itadOS)

```
sudo mkdir -p config/includes.chroot && sudo mv ~/Downloads/itadOS-main/itadOSv.0.0.1/ config/includes.chroot
```



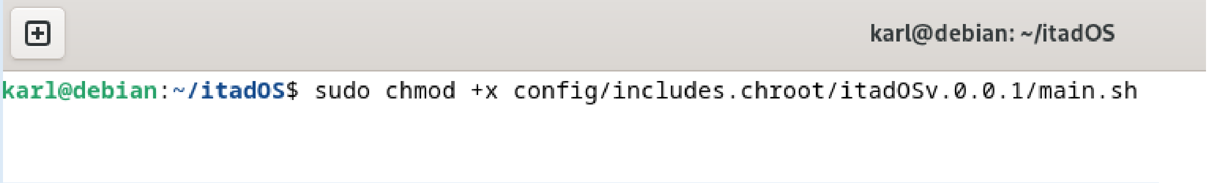
```
karl@debian:~/itadOS$ sudo mkdir -p config/includes.chroot && sudo mv ~/Downloads/itadOS-main/itadOSv.0.0.1/ config/includes.chroot
```

***Figure 1.3**. Directory made for itadOS and it is being moved into it.*

Step 4 – Give itadOS execution permission

- **Issue chmod command, as shown in figure 1.4.**

```
sudo chmod +x config/includes.chroot/itadOSv.0.0.1/main.sh
```



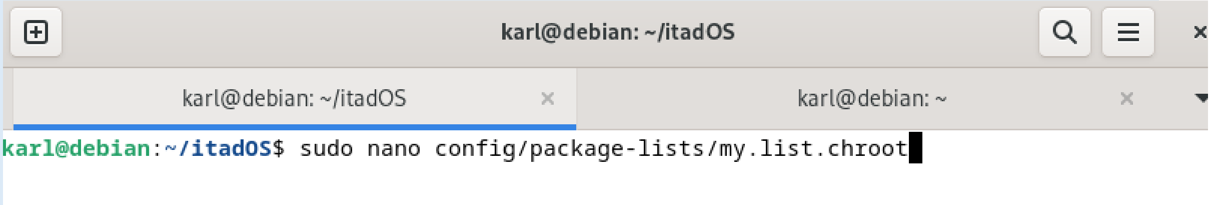
```
karl@debian:~/itadOS$ sudo chmod +x config/includes.chroot/itadOSv.0.0.1/main.sh
```

***Figure 1.4**. ItadOS given execution permissions using chmod command.*

Step 5 – Add the dependencies

- **Create a file, as shown in figure 1.5.**

```
sudo nano config/package-lists/my.list.chroot
```

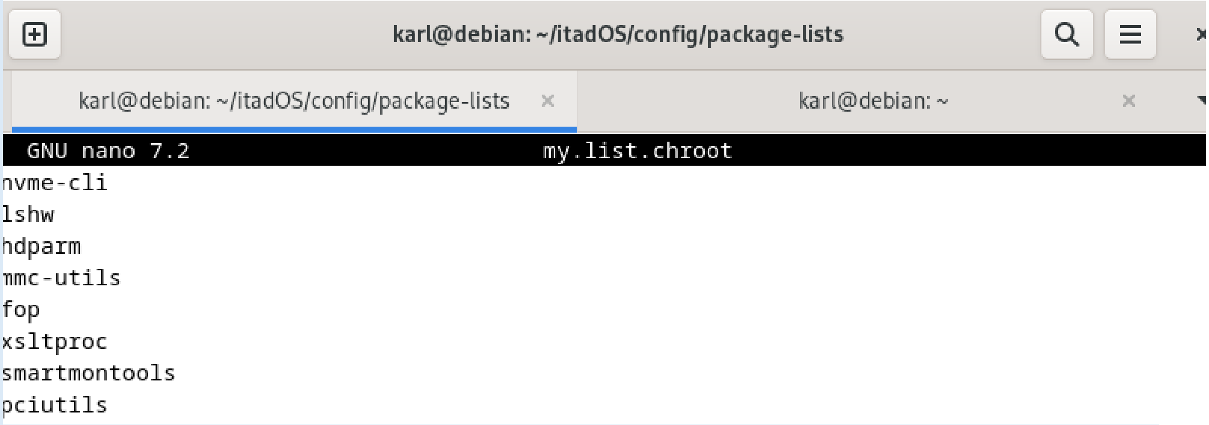


```
karl@debian:~/itadOS$ sudo nano config/package-lists/my.list.chroot
```

Figure 1.5. *File for packages is created.*

- **Insert the following to my.list.chroot, as shown in figure 1.6:**

```
nvme-cli

lshw

hdparm

mmc-utils

fop

xsltproc

smartmontools

pciutils
```



karl@debian: ~/itadOS/config/package-lists
karl@debian: ~/itadOS/config/package-lists
karl@debian: ~

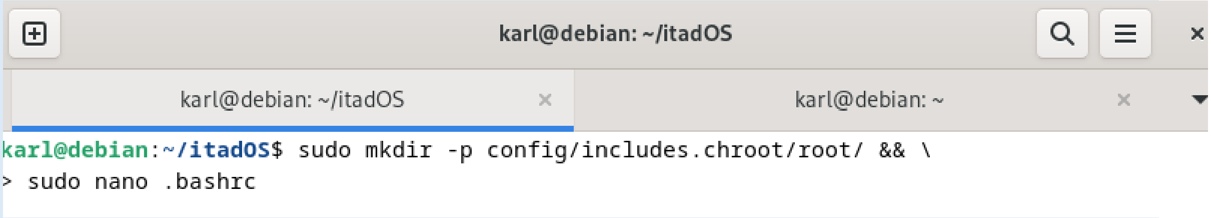
```
 GNU nano 7.2                    my.list.chroot
nvme-cli
lshw
hdparm
mmc-utils
fop
xsltproc
smartmontools
pciutils
```

Figure 1.5. *my.list.chroot filled with required packages.*

Step 6 – Start itadOS on boot

- **Create path and file '.bashrc' and start editing it, as shown in figure 1.6.**

```
sudo mkdir -p config/includes.chroot/root/ && sudo nano .bashrc
```

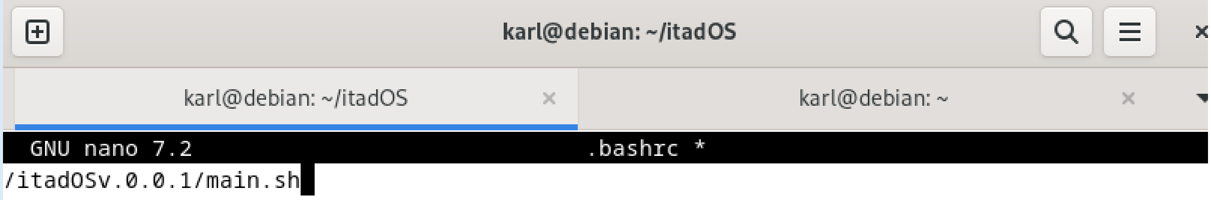


```
karl@debian:~/itadOS$ sudo mkdir -p config/includes.chroot/root/ && \
> sudo nano .bashrc
```

***Figure 1.6**. Path for .bashrc created and nano command issued.*

- **Insert the following line into .bashrc, as shown in figure 1.7:**

```
/itadOSv.0.0.1/main.sh
```



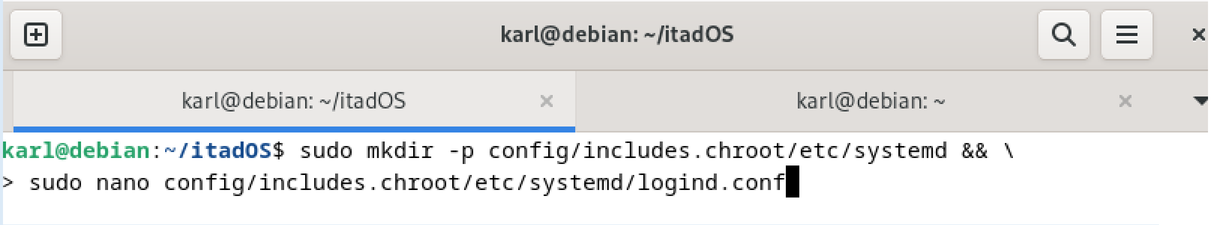
```
  GNU nano 7.2                                   .bashrc *
/itadOSv.0.0.1/main.sh
```

***Figure 1.7**. Bashrc contents.*

Step 7 – Allow laptop lid to be closed

- **Create path and file 'logind.conf' and start editing it, as shown in figure 1.8.**

```
Sudo mkdir -p config/includes.chroot/etc/system && sudo nano
config/includes.chroot/etc/systemd/logind.conf
```

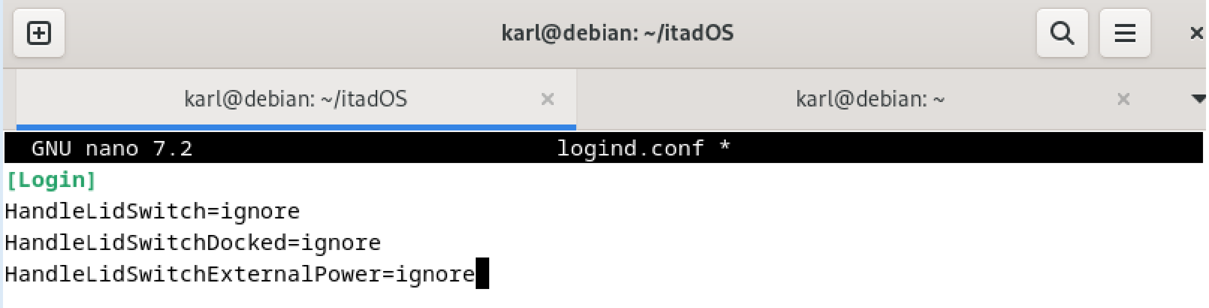


```
karl@debian:~/itadOS$ sudo mkdir -p config/includes.chroot/etc/systemd && \
> sudo nano config/includes.chroot/etc/systemd/logind.conf
```

__Figure 1.8__. Path for logind.conf created and nano command issued.

- **Add the following to logind.conf, as shown in figure 1.9:**

```
[Login]

HandleLidSwitch=ignore

HandleLidSwitchDocked=ignore

HandleLidSwitchExternalPower=ignore
```



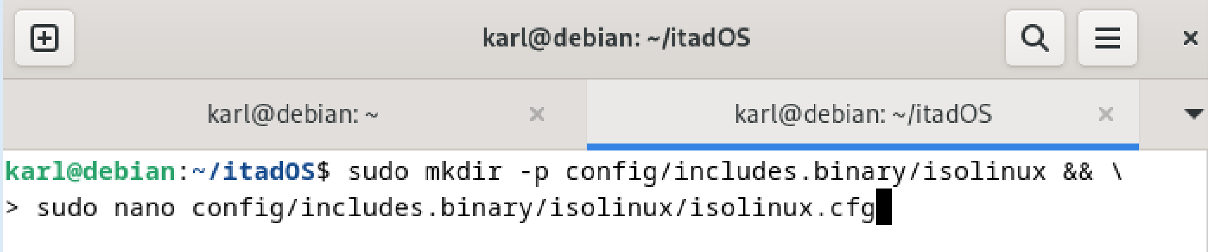
```
  GNU nano 7.2                         logind.conf *
[Login]
HandleLidSwitch=ignore
HandleLidSwitchDocked=ignore
HandleLidSwitchExternalPower=ignore
```

__Figure 1.9__. Logind.conf contents.

Step 8 – Legacy boot support

- **Create path and file, as shown in figure 1.10:**

```
sudo mkdir -p config/includes.chroot/isolinux && sudo nano
config/includes.chroot/isolinux/isolinux.cfg
```

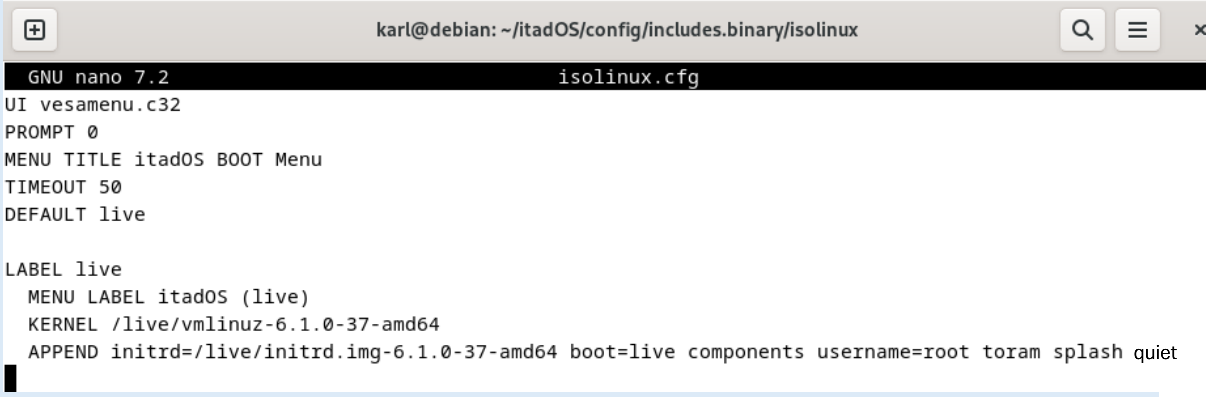


```
karl@debian:~/itadOS$ sudo mkdir -p config/includes.binary/isolinux && \
> sudo nano config/includes.binary/isolinux/isolinux.cfg
```

Figure 1.10. *Path for isolinux.cfg created and nano command issued.*

- **Insert the following to isolinux.cfg, as shown in figure 1.11:**

```
UI vesamenu.c32
PROMPT 0
MENU TITLE itadOS Boot Menu
TIMEOUT 50
DEFAULT live

LABEL live
  MENU LABEL Boot itadOS (Live)
  KERNEL /live/vmlinuz-6.1.0-37-amd64
  APPEND initrd=/live/initrd.img-6.1.0-37-amd64 boot=live components
username=root toram quiet splash
```

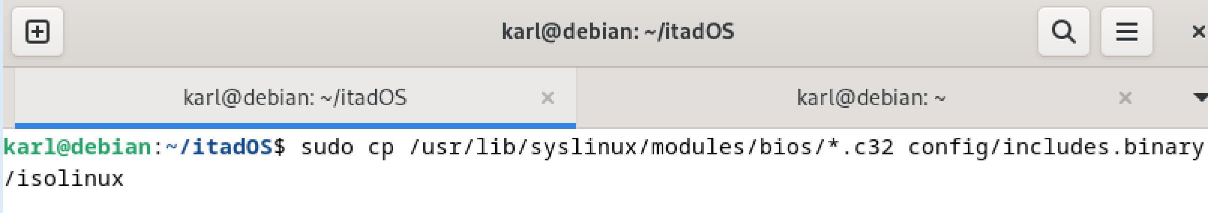


```
  GNU nano 7.2                                isolinux.cfg
UI vesamenu.c32
PROMPT 0
MENU TITLE itadOS BOOT Menu
TIMEOUT 50
DEFAULT live

LABEL live
  MENU LABEL itadOS (live)
  KERNEL /live/vmlinuz-6.1.0-37-amd64
  APPEND initrd=/live/initrd.img-6.1.0-37-amd64 boot=live components username=root toram splash quiet
```

Figure 1.11. *Isolinux.cfg contents.*

- **Also add required binaries from syslinux, as shown in figure 1.12:**

```
cp /usr/lib/syslinux/modules/bios/*.c32
config/includes.binary/isolinux/
```



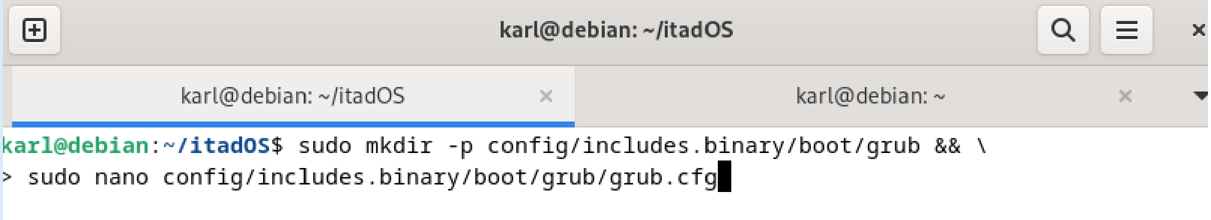
```
karl@debian:~/itadOS$ sudo cp /usr/lib/syslinux/modules/bios/*.c32 config/includes.binary
/isolinux
```

Figure 1.12. *COM32 modules copied to the destination.*

Step 9 – UEFI boot support

- **Create path and file, as shown in figure 1.13:**

```
sudo mkdir -p config/includes.binary/boot/grub && sudo nano
config/includes.binary/boot/grub/grub.cfg
```

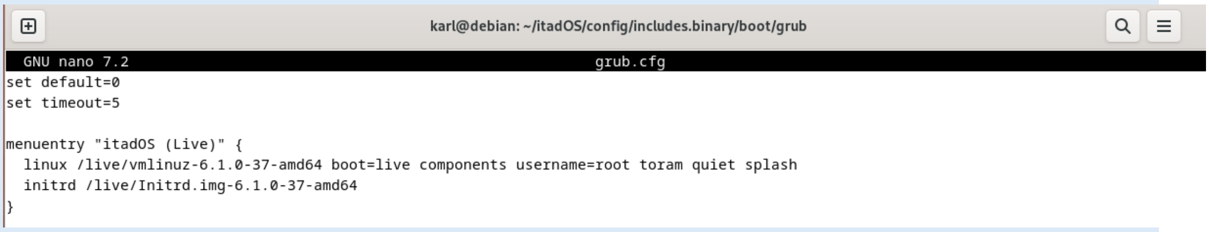


```
karl@debian:~/itadOS$ sudo mkdir -p config/includes.binary/boot/grub && \
> sudo nano config/includes.binary/boot/grub/grub.cfg
```

Figure 1.13. *Path for grub.cfg created and nano command issued.*

- **Insert the following to grub.cfg, as shown in figure 1.14:**

```
set default=0
set timeout=5

menuentry "itadOS (Live)" {
    linux /live/vmlinuz-6.1.0-37-amd64 boot=live components
username=root toram quiet splash
    initrd /live/Initrd.img-6.1.0-37-amd64
}
```



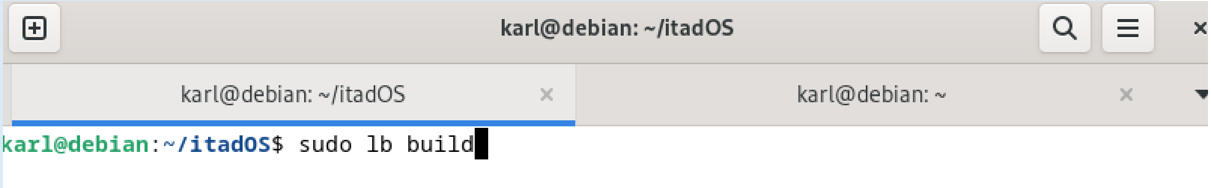
```
set default=0
set timeout=5

menuentry "itadOS (Live)" {
  linux /live/vmlinuz-6.1.0-37-amd64 boot=live components username=root toram quiet splash
  initrd /live/Initrd.img-6.1.0-37-amd64
}
```

Figure 1.14. *grub.cfg contents.*

Step 10. – Build ISO

- **Enter the following command, as shown in figure 1.15:**

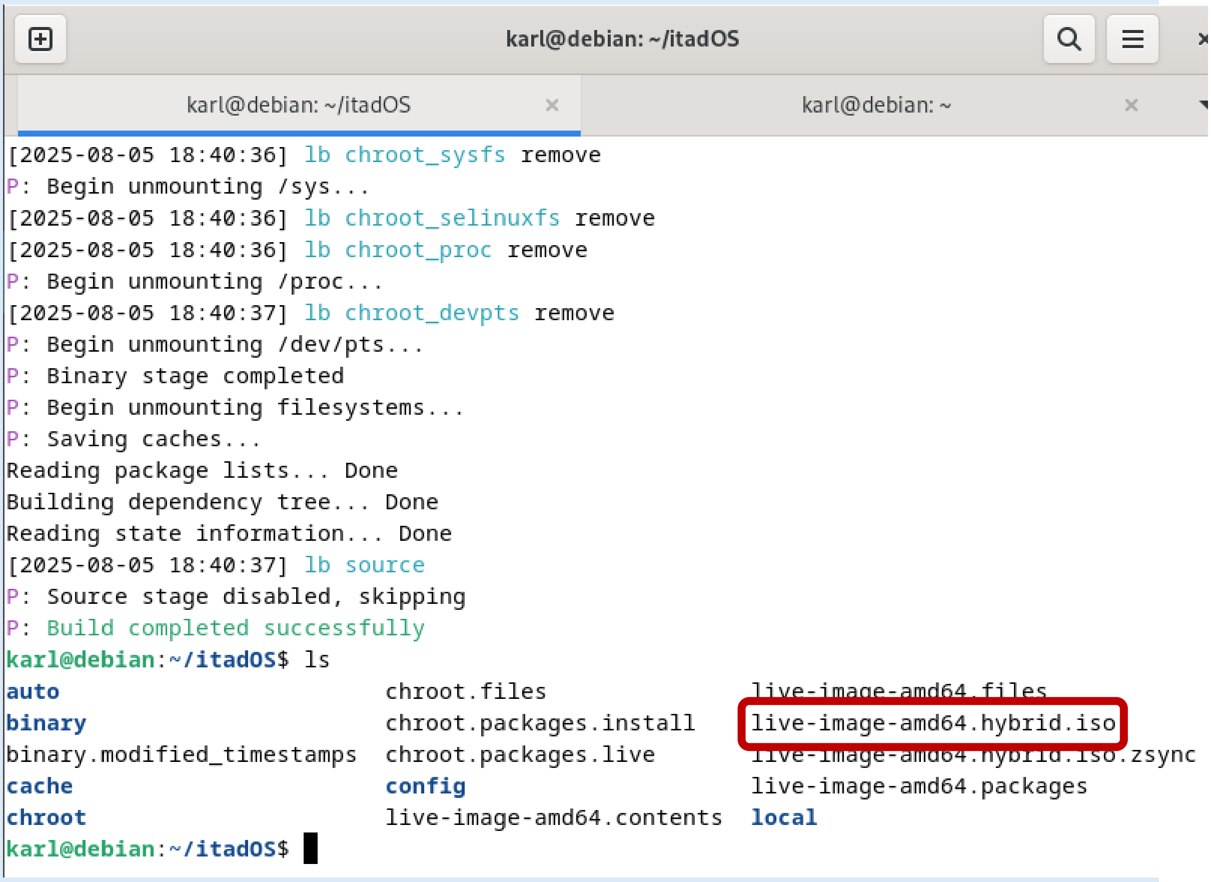
```
sudo lb build
```



```
karl@debian:~/itadOS$ sudo lb build
```

Figure 1.15. *Sudo lb build command issued.*

- **ISO file is now created as shown in figure 1.16.**



```
[2025-08-05 18:40:36] lb chroot_sysfs remove
P: Begin unmounting /sys...
[2025-08-05 18:40:36] lb chroot_selinuxfs remove
[2025-08-05 18:40:36] lb chroot_proc remove
P: Begin unmounting /proc...
[2025-08-05 18:40:37] lb chroot_devpts remove
P: Begin unmounting /dev/pts...
P: Binary stage completed
P: Begin unmounting filesystems...
P: Saving caches...
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
[2025-08-05 18:40:37] lb source
P: Source stage disabled, skipping
P: Build completed successfully
karl@debian:~/itadOS$ ls
auto                         chroot.files                live-image-amd64.files
binary                       chroot.packages.install     live-image-amd64.hybrid.iso
binary.modified_timestamps   chroot.packages.live        live-image-amd64.hybrid.iso.zsync
cache                        config                      live-image-amd64.packages
chroot                       live-image-amd64.contents   local
karl@debian:~/itadOS$
```

Figure 1.16. *ItadOS ISO file is higlighed.*

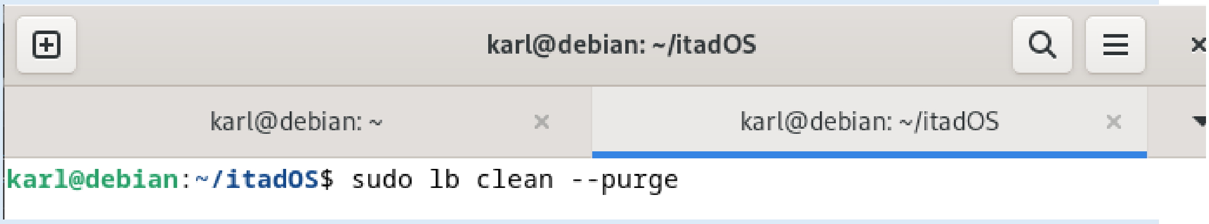
Modify itadOS

‼️ **Must complete '*Create ISO file*' before continuing.** ‼️

Step 1 – Clean config

- **Go into the directory created *here* and insert the following command, as shown in figure 2.1:**

```
sudo lb clean --purge
```



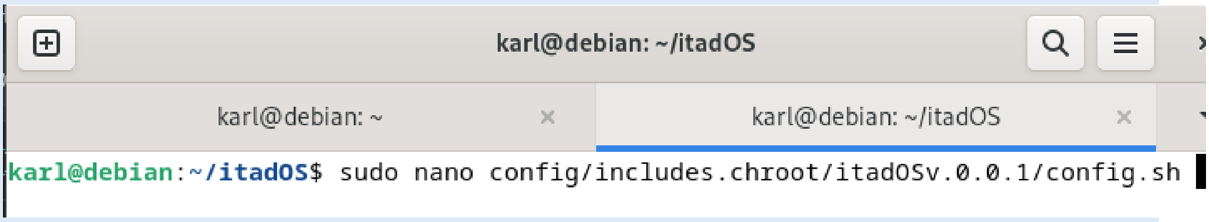
```
karl@debian:~/itadOS$ sudo lb clean --purge
```

***Figure 1.2**. sudo lb clean –purge command issued.*

Step 2 – Modify itadOS settings

- **Modify settings in config.sh, as shown in figure 2.2.**

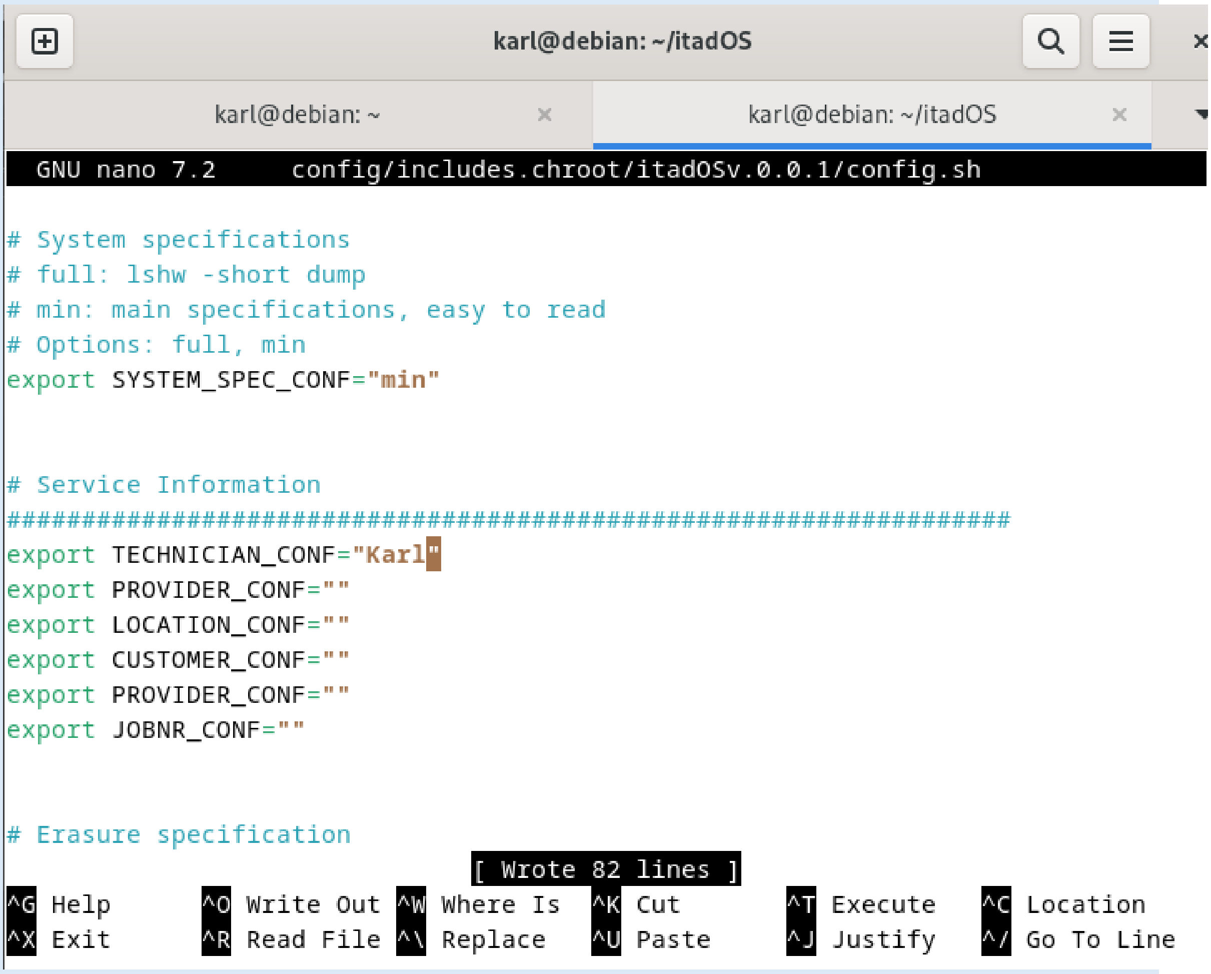
```
sudo nano config/includes.chroot/itadOSv.0.0.1/config.sh
```



```
karl@debian:~/itadOS$ sudo nano config/includes.chroot/itadOSv.0.0.1/config.sh
```

__Figure 2.2__. Nano command issued for config.sh

- **In this example, I am setting default technician's name to 'Karl', as shown in figure 2.3.**



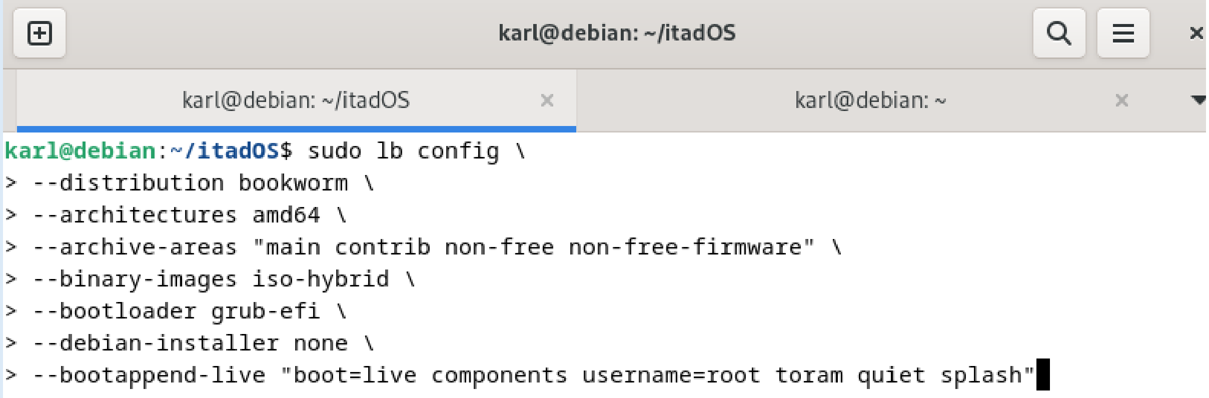
```
 GNU nano 7.2      config/includes.chroot/itadOSv.0.0.1/config.sh

# System specifications
# full: lshw -short dump
# min: main specifications, easy to read
# Options: full, min
export SYSTEM_SPEC_CONF="min"


# Service Information
###################################################################
export TECHNICIAN_CONF="Karl"
export PROVIDER_CONF=""
export LOCATION_CONF=""
export CUSTOMER_CONF=""
export PROVIDER_CONF=""
export JOBNR_CONF=""


# Erasure specification
                               [ Wrote 82 lines ]
^G Help       ^O Write Out ^W Where Is  ^K Cut       ^T Execute    ^C Location
^X Exit       ^R Read File ^\ Replace   ^U Paste     ^J Justify    ^/ Go To Line
```

__Figure 2.3__. ItadOS default technician changed to 'Karl'.

Step 3 – Issue config command

- **Enter the following command, as shown in figure 2.4:**

```
sudo lb config --distribution bookworm --architectures amd64 --archive-
areas "main contrib non-free non-free-firmware" --binary-images iso-
hybrid --bootloader grub-efi --debian-installer none --bootappend-live
"boot=live components username=root toram quiet splash"
```



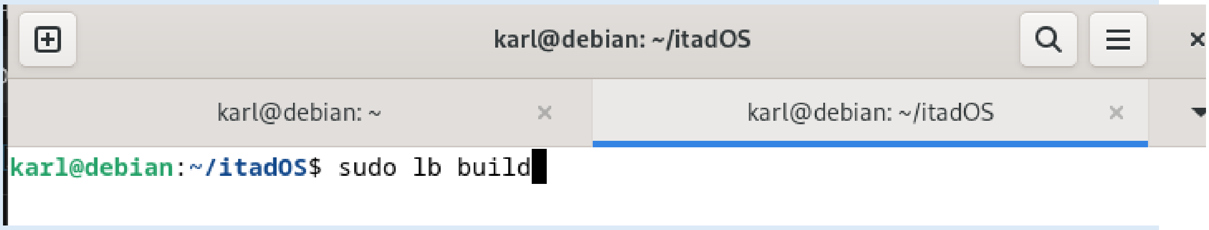
```
karl@debian:~/itadOS$ sudo lb config \
> --distribution bookworm \
> --architectures amd64 \
> --archive-areas "main contrib non-free non-free-firmware" \
> --binary-images iso-hybrid \
> --bootloader grub-efi \
> --debian-installer none \
> --bootappend-live "boot=live components username=root toram quiet splash"
```

***Figure 2.4**. Live-build config command issued.*

Step 4 – Build ISO

- **Enter the following command, as shown in figure 2.5:**

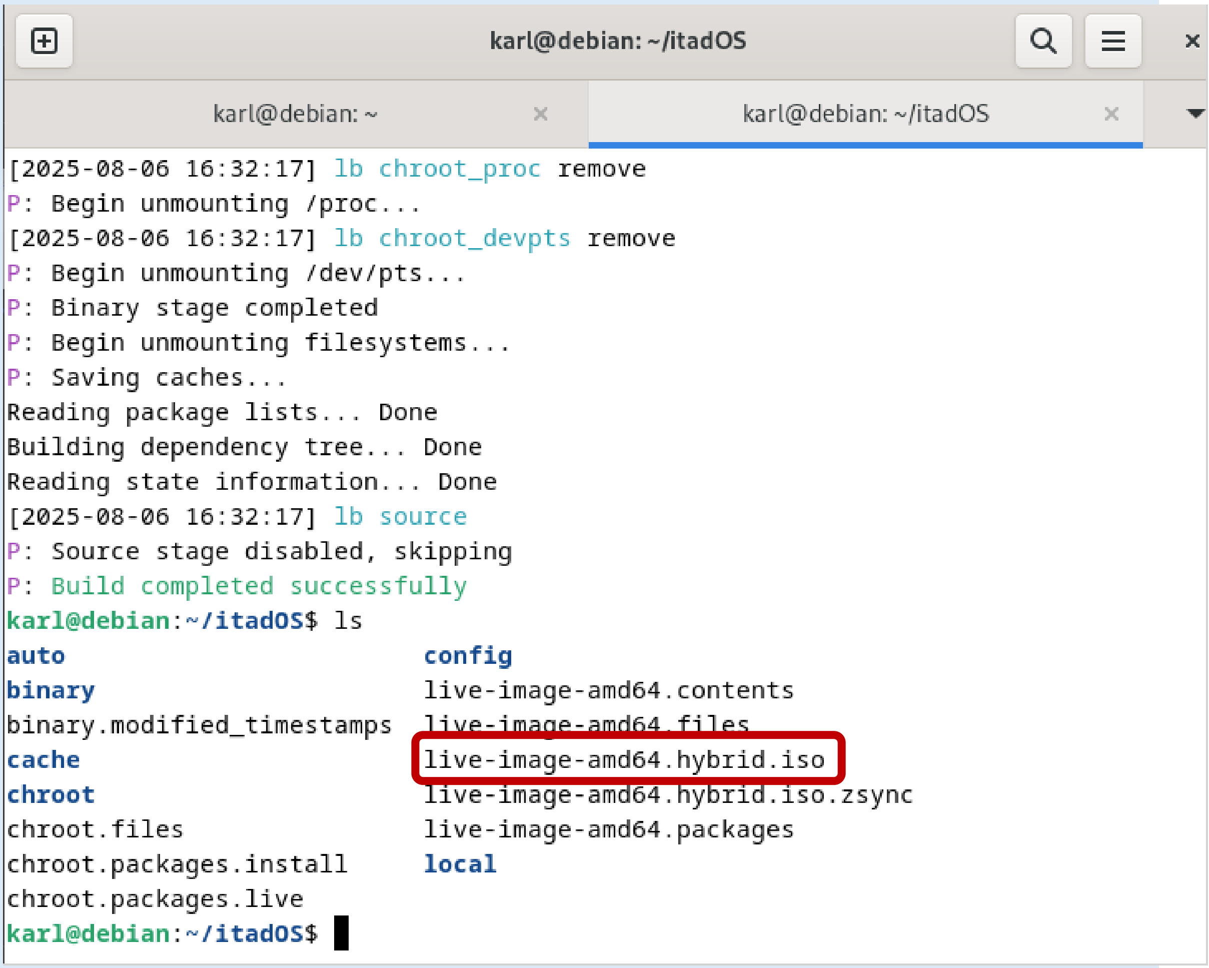
```
sudo lb build
```



```
karl@debian:~/itadOS$ sudo lb build
```

***Figure 2.5**. Sudo lb build command issued.*

- **ISO file is now created as shown in figure 2.6.**



```
[2025-08-06 16:32:17] lb chroot_proc remove
P: Begin unmounting /proc...
[2025-08-06 16:32:17] lb chroot_devpts remove
P: Begin unmounting /dev/pts...
P: Binary stage completed
P: Begin unmounting filesystems...
P: Saving caches...
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
[2025-08-06 16:32:17] lb source
P: Source stage disabled, skipping
P: Build completed successfully
karl@debian:~/itadOS$ ls
auto                        config
binary                      live-image-amd64.contents
binary.modified_timestamps  live-image-amd64.files
cache                       live-image-amd64.hybrid.iso
chroot                      live-image-amd64.hybrid.iso.zsync
chroot.files                live-image-amd64.packages
chroot.packages.install     local
chroot.packages.live
karl@debian:~/itadOS$
```

***Figure 1.16**. ItadOS ISO file is higlighed.*

Create itadOS USB disk

This guide is utilising rufus on Windows PC.

Step 1 – Get flashing utility.

- **Install Rufus (windows) or other alternative software.**

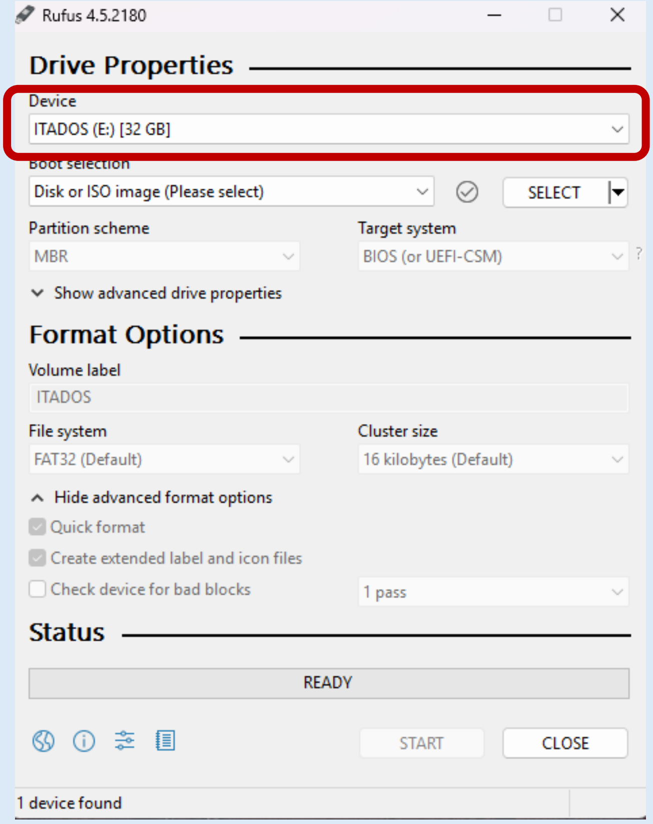
Rufus : https://rufus.ie/en/

Step 2 – Get itadOS ISO

- **Download itadOS ISO from *here* OR create ISO *here*.**

Step 3 – Flash USB disk with itadOS

- **Insert the USB drive into the PC and choose it from the list highlighted in figure 3.1.**



Rufus 4.5.2180

Drive Properties

Device: ITADOS (E:) [32 GB]

Boot selection: Disk or ISO image (Please select)

Partition scheme: MBR

Target system: BIOS (or UEFI-CSM)

Format Options

Volume label: ITADOS

File system: FAT32 (Default)

Cluster size: 16 kilobytes (Default)

☑ Quick format

☑ Create extended label and icon files

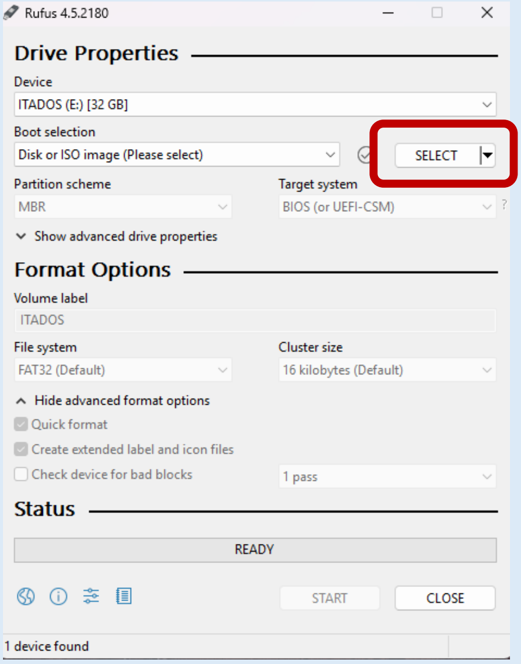
□ Check device for bad blocks — 1 pass

Status: READY

1 device found

Figure 3.1. *Rufus' USB drive list highlighted.*

- **Click on the highlighted button in figure 3.2 and select itadOS ISO.**



Rufus 4.5.2180

Drive Properties

Device: ITADOS (E:) [32 GB]

Boot selection: Disk or ISO image (Please select)

Partition scheme: MBR

Target system: BIOS (or UEFI-CSM)

Format Options

Volume label: ITADOS

File system: FAT32 (Default)

Cluster size: 16 kilobytes (Default)

☑ Quick format

☑ Create extended label and icon files

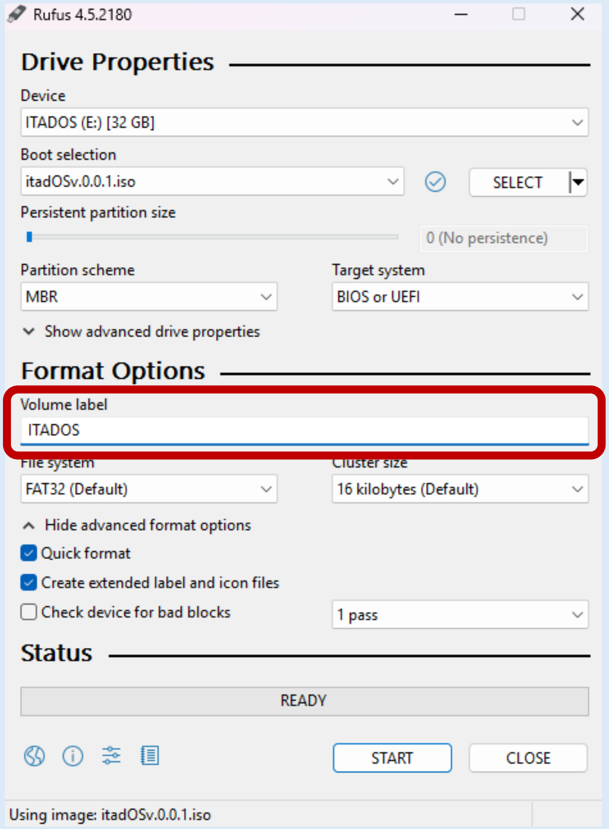
☐ Check device for bad blocks — 1 pass

Status: READY

1 device found

Figure 3.2. *ISO selection button in Rufus.*

- **Name the volume label as ‘ITADOS’ as highlighted in figure 3.3, and press ‘START’.**
  - **This helps itadOS to identify boot disk.**



Rufus 4.5.2180

Drive Properties

Device: ITADOS (E:) [32 GB]

Boot selection: itadOSv.0.0.1.iso

Persistent partition size: 0 (No persistence)

Partition scheme: MBR

Target system: BIOS or UEFI

Show advanced drive properties

Format Options

Volume label: ITADOS

File system: FAT32 (Default)

Cluster size: 16 kilobytes (Default)

Hide advanced format options

☑ Quick format

☑ Create extended label and icon files

□ Check device for bad blocks: 1 pass

Status

READY

Using image: itadOSv.0.0.1.iso

Figure 3.3. *Volume label named as ‘ITADOS’ in Rufus.*