



# Dus, guidus, mkusb version 22

## quick start manual

by sudodus alias nio-wiklund at launchpad



# Prepare for mkusb

- Drives alias mass storage devices
  - You need two drives or mass storage devices (pendrive, flash card, HDD, SSD). The minimum sizes are 2 GB and 8 GB, but obviously the final operating system will soon need more space for your personal files as well as for additional system files (program packages),
    - a **drive for the installer** at least as big as the iso file for cloning, so minimum 2 GB for Ubuntu Server, 4 GB for standard Ubuntu desktop and the Ubuntu family flavours for a live only system and 8 GB or more for a persistent live system (typically a USB pendrive, but a memory card or an external SSD will also work),
    - a **drive for the target**, the final installed operating system (typically an internal drive, but it could also be connected via USB, eSATA or a card reader). Minimum 8 GB for Lubuntu but 16 GB or more is better, and standard Ubuntu desktop with a lot of snaps needs at least 32 GB.
- Backup
  - **Backup** all personal data before trying this method because the installer drive and maybe also the target drive will be completely overwritten

Tough guys never backup their data,  
they do the work twice instead ;-)



# Install or download mkusb

- Install (or download) the shell-script **mkusb** and
- download the **operating system** as a
  - hybrid iso file or compressed image file.
- mkusb can be installed from PPA with the following commands

```
sudo add-apt-repository universe          # only needed for live system of Ubuntu Desktop
sudo add-apt-repository ppa:mkusb/ppa    # and press Enter
sudo apt update
sudo apt install mkusb
sudo apt install usb-pack-efi           # for persistent live drives
```

  - Installing via PPA is the easy way to install and keep mkusb up to date automatically.
- For distros outside the **Ubuntu family**, mkusb can be downloaded / installed starting by downloading from
  - <https://phillw.net/isos/linux-tools/mkusb/>
  - or
  - <https://github.com/sudodus/tarballs>and download a tarball to be used according to instructions at the following pages
  - <https://help.ubuntu.com/community/mkusb/gui/tarball>
  - <https://help.ubuntu.com/community/mkusb/plug>
  - These instructions install mkusb-**dus** and/or **mkusb-plug** with a graphical user interface (plus text user interfaces to be used with text screens and in terminal windows). They are most likely to work in Debian and Linux distros based on Ubuntu and Debian. With distros that are more different, *cloning* is likely to work, but *not* creating persistent live drives.



# Files and checksums

- Current Ubuntu, Debian and many other linux iso files can be used (including the mini.iso files except the mini.iso of 12.04 LTS). Image files and compressed image files can also be used.

`file.iso`

`file.img`

`file.img.gz`

`file.img.xz`

- Windows 7-10 iso files

`windows.iso`

- Download also the corresponding checksum files, usually md5sum. See the following links

<https://help.ubuntu.com/community/mkusb>

<http://phillw.net/isos/linux-tools/mkusb/>



# Check download and clone image in Linux

- Change directory to where you have the downloaded files.
- Check that the download was successful with md5sum
  - Example: `md5sum xubuntu-22.04.1-desktop-amd64.iso`
- Use mkusb to install/clone/flash the operating system
  - mkusb helps you find the correct target drive and avoid the risk with dd.
- If installed, mkusb is in the system PATH and can be started
  - from the menu
    - menu – system – mkusb
  - or in **dash** (in standard Ubuntu) or similar tools to select installed application programs.
  - It can also be started from a terminal window or a text screen with
    - `mkusb #` or with an input file, for example
      - `mkusb xubuntu-22.04.1-desktop-amd64.iso`
      - `mkusb "path/file.iso" #` within quotes for special characters
- If downloaded, make `mkusb` executable `sudo chmod ugo+x mkusb`

Start from the menu in many distros



# Start mkusb from Activities in Gnome or Dash in Unity

If you remember the name,  
find **mkusb** after two letters

Activities Thu 14:56 sv

Q mkl

mk

Applications

mkusb

mkusb

Click the icon to go



# Start mkusb in a terminal window

```
ubuntu@ubuntu: ~  
ubuntu@ubuntu:~$ man mkusb  
ubuntu@ubuntu:~$ man mkusb-nox  
ubuntu@ubuntu:~$ mkusb  
-----  
Usage: mkusb [input-file] # optional parameter  
-----  
d: dus, guidus, mkusb-dus - Classic, easy to use  
p: Plug, mkusb-plug - New, easy to use  
n: NoX, sudo mkusb-nox - original text mode  
b: Bas, sudo mkusb-bas - basic text mode for old/basic linux  
e: Eleven, sudo -H mkusb-11 - Old user interface  
q: Quit  
-----  
Select version of mkusb (d/p/n/b/e/q) █
```



# Start mkusb via ssh in text mode

```

x - □ sudodus@bionic64: /home/sudodus/Downloads
dus 12.3.2 - Cloning, live linux, windows / Persistent live
-----
Move between items with the arrow keys
- Do USB Stuff -
Welcome and Notice about Overwriting
The target device will be completely overwritten
c Cloning iso file, [compressed] image file or
l 'Live-only' or linux installer from iso file
p 'Persistent live' - only Debian and Ubuntu
w extracting Windows installer
q Quit
-----
< OK >

```

*Shortcut: type **dus** to get directly to mkusb version 12*

```

ssh sudodus@bionic64
cd Downloads
dus lubuntu-18.04-desktop-amd64.iso

```





# ... more details

- The current version of mkusb uses a **text based console** and **graphical windows** to help you select the correct source file and target device. mkusb can monitor the data transfer with pv, and suggests that you install it, if not yet installed. pv shows Mibibytes and dd shows Megabytes.
- mkusb needs a number of help programs and suggests that you install them. If you cannot install some of these help programs, you should install **dus** or **mkusb-nox** or **mkusb-bas**, available at this link

<http://phillw.net/isos/linux-tools/mkusb/>

- mkusb is described with more details at the wiki page

<https://help.ubuntu.com/community/mkusb>

- If you have installed mkusb from the PPA, it will be updated together with other installed programs, and there are manual pages for mkusb and mkusb-nox

`man mkusb`

`man mkusb-nox`



# Slideshow

- This manual was made for mkusb version 12
  - alias dus with the GUI guidus.
- It is updated for mkusb version 22
  - with focus on **dus** version 22
- Other mkusb tools
  - mkusb-plug is described at [this link](#)
  - mkusb-nox is described at [this link](#)



mkusb

Examples

Install Ubuntu 16.04.1 LTS

Run mkusb dus

Run mkusb version dus?

Answer **Yes** or press **Enter** to **continue**

Answer **No**, to **select another version**

No Yes

(Desktop icon)

The quick choice 'Yes' continues with the same version of mkusb.  
You can select *mkusb dus* or *mkusb 11*  
(In another window after the answer 'No')



The screenshot shows a Linux desktop environment. At the top, the system tray displays the time as 5:54 AM and various system icons. The main window is a terminal titled "mkusb-dus console - Do USB Stuff". The terminal output is as follows:

```
mkusb-dus - Do USB Stuff
mkusb-dus needs superuser permissions (sudo) for some tasks,
in order to prepare and write to the target, a block device.
dus 12.0.0
dus wants the program(s)
usb-pack-efi 'only to make a persistent live drive'
Please install the corresponding package(s)
```

A light blue speech bubble points to the terminal text, containing the text "mkusb console (xterm)".

In the foreground, a dialog box titled "dus 12.0.0 - Do USB Stuff" is open. It has an information icon and the following text:

**- Do USB Stuff -**

**Welcome and Notice about Overwriting**

**The target device will be completely overwritten**

dus wants the program(s)  
usb-pack-efi 'only to make a persistent live drive'  
Please install the corresponding package(s)

An "OK" button is located at the bottom right of the dialog box. A light blue speech bubble points to the dialog box, containing the text "Welcome and notice about overwriting".



mkusb

mkusb-dus console - Do USB Stuff

mkusb-dus - Do USB Stuff

mkusb-dus needs superuser permissions (sudo) for some tasks, in order to prepare and write to the target, a block device.

dus 22.1.0

live system or temporary superuser permissions

Here you select what to do:  
Install / Backup / Restore / Wipe / ...

dus 22.1.0 - Install / Backup / Restore / Wipe

Select items from the list below.

hotkey	Move between items with the arrow keys
i	Install (make a boot device)
s	restore to a Standard storage device
w	Wipe a device (drive)
b	Backup persistent live home
r	Restore persistent live home
u	manage USB-pack-EFI
z	manage Zenity window and font size
a	About
q	Quit (exit from dus)

Quit OK



mkusb-dus console - Do USB Stuff

```
mkusb-dus - Do USB Stuff
mkusb-dus needs superuser permissions (sudo) for some tasks,
in order to prepare and write to the target, a block device.
dus 22.1.0
live system or temporary superuser permissions
[]
```

2. 'dus-iso2usb' only when problems with standard method

dus 22.1.0 - Select method/tool

hotkey	Move between items with the arrow keys
i	'dus-Iso2usb', grub-n-iso method
<b>l</b>	'dus-Live', cloning method
q	Quit

dus 22.1.0 - Cloning, live linux, windows / Persistent

hotkey	Move between items with the arrow keys
c	Cloning iso file, [compressed] image file or device
<b>l</b>	'Live-only' or linux installer from iso file
p	'Persistent live' - only Debian and Ubuntu
w	extracting Windows installer
q	Quit

1. Select which kind of installation you want to make

dus 22.1.0 - Select method/tool

hotkey	Move between items with the arrow keys
i	'dus-Iso2usb', grub-n-iso method
<b>p</b>	'dus-Persistent', classic dus method
q	Quit

dus 22.1.0 - Extract installer for Windows 7-11

hotkey	Move between items with the arrow keys
<b>n</b>	New version, works also with huge Windows iso files
o	Old version, works also in 32-bit linux
q	Quit



The screenshot shows a Linux desktop with a purple and red background. A terminal window titled "mkusb-dus console - Do USB Stuff" is open, displaying the following text:

```
mkusb-dus - Do USB Stuff
mkusb-dus needs superuser permissions (sudo) for some tasks,
in order to prepare and write to the target, a block device.
dus 12.0.0
dus wants the program(s)
usb-pack-efi 'only to make a persistent live drive'
Please install the corresponding package(s)
```

A dialog box titled "dus 12.0.0 - Select source device" is overlaid on the terminal. It contains the following text:

ISO 9660 partition found. Quick choice possible.  
Answer **No**, if you intend to install to the drive with `/dev/sda4`.

MODEL	NAME	SIZE	FSTYPE	LABEL	MOUNTPOINT
Extreme	sda	29.8G			
	└sda4	1.4G	iso9660	Ubuntu 16.04.1 LTS amd64	/cdrom
FlashBlu	sdb	7.5G	iso9660	torios-live	
	└sdb1	729M	iso9660	torios-live	
Extreme	sdc	14.9G			
	└sdc4	982M	iso9660	Debian jessie 20160917-14:56	/media/ubuntu/Debian
	jessie 20160917-14:56				
CDDVDW SN-208AB	sr0	1024M			

Do you want to install **Ubuntu 16.04.1 LTS amd64** from the device `/dev/sda4` ?

Buttons: No, Yes

A light blue callout box at the bottom of the dialog contains the text: "From an 'mkusb persistent live drive' you can use the *partition* with the image of the iso file as source".



mkusb

dus 12.0.0 - Select source file

Recent  
Home  
Desktop  
Documents  
Downloads  
Music  
Pictures  
Videos  
Debian j...  
persiste...  
Ubuntu 16.04...  
usbdata  
+ Other Locatio...

Name	Size	Modified
lubuntu-16.04.1-desktop-amd64.iso	896.5 MB	06:18

Normally you will select a source *file*:  
iso file or [compressed] image file

Select which files to 'see' here with a filter:  
It makes it easier to find the source files

\*.[sm][og]\*

Cancel OK





mkusb

mkusb-dus console - Do USB Stuff

```
mkusb-dus - Do USB Stuff
mkusb-dus needs superuser permissions (sudo) for some tasks,
in order to prepare and write to the target, a block device.
dus 12.0.0
dus wants the program(s)
usb-pack-efi 'only to make a persistent live drive'
Please install the corresponding package(s)
source device: /dev/sda4 'Ubuntu 16.04.1 LTS amd64'
Drive that contains source file: /dev/sda
Live drive, that is booted from: /dev/sda
cands=2
sdb
Kanguru_FlashBlu
7.5G
usb
USB or memory card
sdc
SanDisk_Extreme
14.9G
usb
USB or memory card
[]
```

dus 12.0.0 - Select target device

Select items from the list below.

Select	Device	Target name/model	Size	Bus	Kind of device
<input checked="" type="radio"/>	sdb	Kanguru_FlashBlu	7.5G	usb	USB or memory card
<input type="radio"/>	sdc	SanDisk_Extreme	14.9G	usb	USB or memory card

Quit OK

Select target device: USB pendrive, memory card, HDD, SSD  
There will be an extra warning, if you select a HDD or SSD



mkusb

mkusb-dus console - Do USB Stuff

```
Drive that contains source file: /dev/sdb
Live drive, that is booted from: /dev/sda
cands=2
sdd
Corsair_Voyager_GT_3.0
29.5G
usb
USB or memory card
sdc
JetFlash_Transcend_16GB
15G
usb
USB or memory card
p_target: target=/dev/sdb
target drive size = 29.5G
live system or temporary
Clone/extract system from the source
'/dev/sdb4'
to the target device (drive) '/dev/sdd'
MODEL NAME
Voyager GT 3.0 sdd
```

dus 22.1.0 - Final checkp ahead?

Source: '/dev/sdb4'  
Target: '/dev/sdd'

MODEL	NAME	FSTYPE	LABEL	SIZE
Voyager GT 3.0	sdd	iso9660	Xubuntu Core 20.04 - amd64	29.5G
	└sdd2	vfat	Xubuntu Core 20.04 - amd64	3.9M
	└sdd1	iso9660	Xubuntu Core 20.04 - amd64	818M

Go/Stop Clone/extract system from the source  
'sdb4'  
to the target device (drive) '/dev/sdd'

	name	size	model
<input type="radio"/>	Stop		No, I am not sure yet
<input checked="" type="radio"/>	Go	sdd 29.5g voyager gt 3.0	Yes, I want to go ahead

Stop Go

Please double-check, that you have selected the correct target device, and 'Go' when you are sure

Clone from a partition



mkusb

mkusb-dus console - Do USB Stuff

```
Drive that contains source file: /dev/sdd
Live drive, that is booted from: /dev/sd
cands=2
sda
SAMSUNG_MZ7TD256HAFV-000L9
238.5G
ata
built-in device
sdc
Corsair_Voyager_GT_3.0
29.5G
usb
USB or memory card
p_target: target=/dev/s
target drive size = 32
Clone/extract system
'/media/ubuntu/KEEP_ME/
to the target device (d
MODEL NAME F
Voyager GT 3.0 sdc i
sdc2 v
sdc3 i
sdc1 i
```

Source: '/media/ubuntu/KEEP\_ME/.../xubuntu-20.04-core-amd64.iso'  
Target: '/dev/sdc'

MODEL	NAME	FSTYPE	LABEL	SIZE
Voyager GT 3.0	sdc	iso9660	Lubuntu 22.10 amd64	29.5G
	└sdc2	vfat	ESP	4.2M
	└sdc3	iso9660	Lubuntu 22.10 amd64	300K
	└sdc1	iso9660	Lubuntu 22.10 amd64	2.6G

Go/Stop	Clone/extract system from the source 'xubuntu-20.04-core-amd64.iso' to the target device (drive) '/dev/sdc'	name size model sdc 29.5g voyager gt 3.0
<input checked="" type="radio"/>	Stop	No, I am not sure yet
<input type="radio"/>	Go	Yes, I want to go ahead

Stop Go

Please double-check, that you have selected the correct target device, and 'Go' when you are sure

Clone from an iso file



The screenshot shows a terminal window titled "mkusb-dus console - Do USB Stuff" with the following output:

```
/dev/sda4
/dev/sdb
-----
live system or temporary superuser permissions
source=/dev/sda4
target=/dev/sdb
source=/dev/sda4
ls -l /dev/sda4
brw-rw---- 1 root disk 8, 4 Dec 31 05:42 /dev/sda4
Cloning a device to a USB drive or memory card .....
gpt_zap: done
Installing '/dev/sda4' to '/dev/sdb' ... :
< "/dev/sda4" pv | dd bs=4096
Please wait for sync until '
(flushing file system buffer
1.43GiB 0:01:35 [15.3MiB/s] [
374272+0 records in
374272+0 records out
1533018112 bytes (1.5 GB, 1.4
Syncing the device ...
Done :-)
```

Overlaid on the terminal is a dialog box titled "dus 12.0.0 - check the result" with the following text:

**Check the result (scroll if possible), press Enter to finish**

The target device is unmounted and you can unplug it.  
The system might not see the current partition table of the target device unless you re-plug it.

OK

A light blue callout box at the bottom contains the following instructions:

1. Check for **Done :-)**
2. Check the details if you wish



mkusb

mkusb-dus console - Do USB Stuff

```
target=/dev/sdb
source=/dev/sda4
ls -l /dev/sda4
brw-rw---- 1 root disk 8, 4 Dec 31 05:42 /dev/sda4
Cloning a device to a USB drive or memory card .....
gpt_zap: done

Installing '/dev/sda4' to '/dev/sdb' ... :
< "/dev/sda4" pv | dd bs=4096 of=/dev/sdb
Please wait for sync until 'Done' is written
(flushing file system buffers to the device)
1.43GiB 0:01:35 [15.3MiB/s] [=====>] 100%
374272+0 records in
374272+0 records out
1533018112 bytes (1.5
Syncing the device ...
Done :-)
p_clean:
live system or tempora
live system or tempora
live system or tempora
live system or tempora
```

dus 12.0.0 - Cloning, live linux, windows / Persistent live

Select items from the list below.

hotkey	
	Move between items with the arrow keys
c	Cloning iso file, [compressed] image file or device
l	'Live-only' or linux installer from iso file
p	'Persistent live' - only Debian and Ubuntu
w	extracting Windows installer
q	Quit

Quit OK



The screenshot shows the mkusb application window titled "mkusb-dus console - Do USB Stuff". The terminal displays the following output:

```
Kanguru_FlashBlu
7.5G
usb
USB or memory card
sdc
SanDisk_Extreme
14.9G
usb
USB or memory card
p target: target=/dev/sdb
Clone/extract system from the source
'/dev/sda4'
to the target device (drive) '/dev/sdb'
MODEL      NAME  FSTYPE LABEL      SIZE
FlashBlu   sdb   iso9660 torios-live 7.5G
           └─sdb1 iso9660 torios-live 729M

/dev/sda4
/dev/sdb
-----
live system or temporary superuser permissions
source=/dev/sda4
target=/dev/sdb
source=/dev/sda4
ls -l /dev/sda4
brw-rw---- 1 root disk 8, 4 Dec 31 05:42 /dev/sd
Cloning a device to a USB drive or memory card .
gpt_zap: done

Installing '/dev/sda4' to '/dev/sdb' ... :

< "/dev/sda4" pv | dd bs=4096 of=/dev/sdb
Please wait for sync until 'Done' is written
(flushing file system buffers to the device)
1.43GiB 0:01:35 [15.3MiB/s] [=====>] 100%
374272+0 records in
374272+0 records out
1533018112 bytes (1.5 GB, 1.4 GiB) copied, 146.745 s, 10.4 MB/s
Syncing the device ...
Done :-)
```

The terminal shows the cloning process is complete. The prompt is `p_clean:` and the instructions are:

```
live system or temporary superuser permissions
live system or temporary superuser permissions
live system or temporary superuser permissions
live system or temporary superuser permissions
clean if necessary and return
clean if necessary and quit
Press Enter to finish mkusb-dus
```

Two callout boxes provide additional instructions:

- Top callout: "You can make the console window larger, and you can scroll with the *scrollbar* (middle-click and drag), *scroll-wheel* or *two fingers*"
- Bottom callout: "Press the Enter key to finish from the console window"



# Persistent live system 1(3)

- See details at <https://help.ubuntu.com/community/mkusb/persistent>

2: new sub-menu

Select items from the list below.

hotkey	
c	Cloning iso file, [compressed] image file or device
l	'Live-only' or linux installer from iso file
<b>p</b>	<b>'Persistent live' - only Debian and Ubuntu</b>
w	extracting Windows installer
q	Quit

Quit OK

1: select persistent live

Select items from the list below.

hotkey	
i	'dus-Iso2usb', grub-n-iso method
<b>p</b>	<b>'dus-Persistent', classic dus method</b>
q	Quit

Quit OK

2: new sub-menu

Select items from the list below.

selected	when ticked	'Tick a box' to make a custom selection
<input type="checkbox"/>	msdos	MSDOS partition table (default GPT)
<input type="checkbox"/>	uEFI	usb-pack-efi (default grub from ISO file)
<input type="checkbox"/>	d-n-i	Download and Install (default DISPLAY when security updates)

3: select settings

Please select the percentage of the available space for persistence. The rest of the space will be used for storage (usbdata).

67

Use default OK

4: select space for persistence (percent)



# Persistent live system 2(3)

```
mkusb-dus console - Do USB Stuff
100
218880+0 records in
218880+0 records out
896532480 bytes (897 MB, 855 MiB) copied, 28.1292 s, 31.9 MB/s
Done
do_n_show: Work done
-----
Syncing the target device ...
Wait 5 seconds and a little more ...


```

parted -s "/dev/sdc" print
Model: SanDisk Extreme (scsi)
Disk /dev/sdc: 16.0GB
Sector size (logical/physical): 512B/512B
Partition Table: gpt
Disk Flags:

Number  Start   End     Size    File system  Name      Flags
  2      1049kB  2097kB  1049kB   fat32        primary  bios_grub
  3      2097kB  130MB   128MB   fat32        primary  boot, esp
  4      130MB   1046MB  916MB   primary
  5      1046MB  11.1GB  10.0GB  ext2        primary
  1      11.1GB  16.0GB  4940MB  ntfs        primary  msftdata

lsblk -o MODEL,NAME,FSTYPE,LABEL,MOUNTPOINT,SIZE "/dev/sdc"
MODEL      NAME     FSTYPE LABEL          MOUNTPOINT  SIZE
Extreme    sdc
|-sdc1 ntfs    usbdata        4.6G
|-sdc2
|-sdc3 vfat    lub1604164     122M
|-sdc4 iso9660 Lubuntu 16.04.1 LTS amd64 874M
|-sdc5 ext4    casper-rw      9.3G

```



```

Done :-)
The target device is ready to use.
'/home/ubuntu/Downloads/lubuntu-16.04.1-desktop-amd64.iso'
was installed
Cleanup after dus-persistent finished :-)
Cleanup after dus-persistent finished :-)
-----
Total time used [by dus-persistent] = 182 s; 00:03:02
p_clean:
live system or temporary superuser permissions
clean if necessary and return
clean if necessary and quit
Press Enter to finish mkusb-dus

```


```

**Work done with /dev/sdc :-)**

The target device is ready to use.  
'/home/ubuntu/Downloads/lubuntu-16.04.1-desktop-amd64.iso'  
was installed

OK

Check for **Done :-)**  
Check the details if you wish.

You can make the console window larger,  
and you can scroll with the  
*scrollbar* (middle-click and drag),  
*scroll-wheel* or *two fingers*





# Persistent live system 3(3)

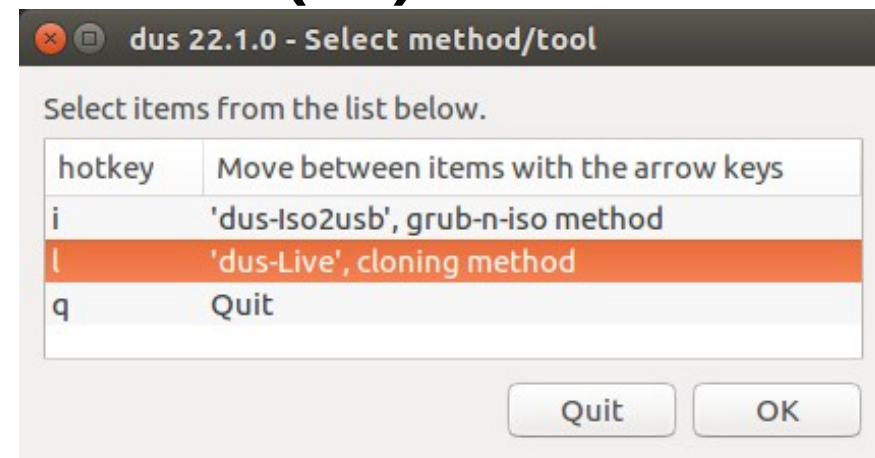
- Advantages
  - works with all current Ubuntu flavour desktop files (Ubuntu, Kubuntu, Lubuntu, ... Xubuntu) and with Linux Mint, ToriOS and several other distros/re-spins based on Ubuntu and Debian Jessie
  - very safe (minimal risk to overwrite the wrong drive by mistake)
  - easy to use
  - the target drive with the persistent live system works in [almost] all PC (Intel/AMD) computers
- Disadvantages (but 'live only' pendrives made with mkusb work in these cases)
  - usb-pack-efi does not work at all in secure mode (UEFI's secure mode), and the boot system based on a 64-bit iso file does not boot in 32-bit computers
  - does not work with linux distros that are not based on Ubuntu (maybe you can tweak the grub.cfg file and make it work)
  - does not work with non-desktop iso files for example the Ubuntu mini.iso or the Ubuntu Server

Remember that most of the time it is enough with a live only USB pendrive and only a waste of effort to create a persistent live system

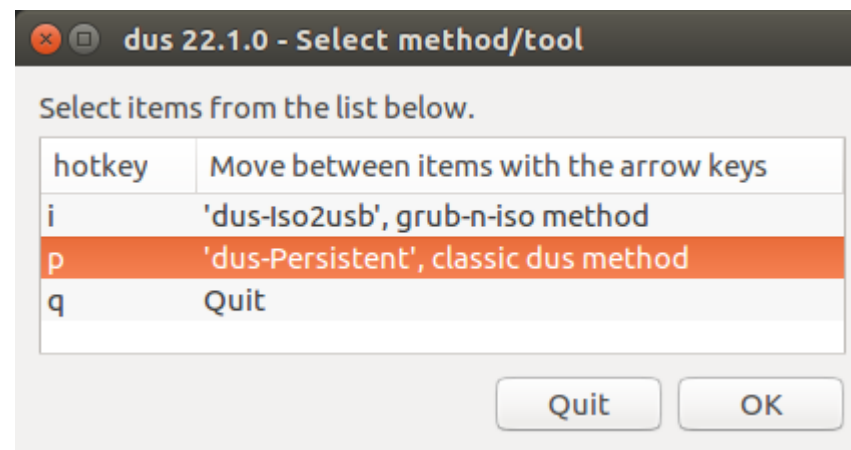


# dus-iso2usb 1(2)

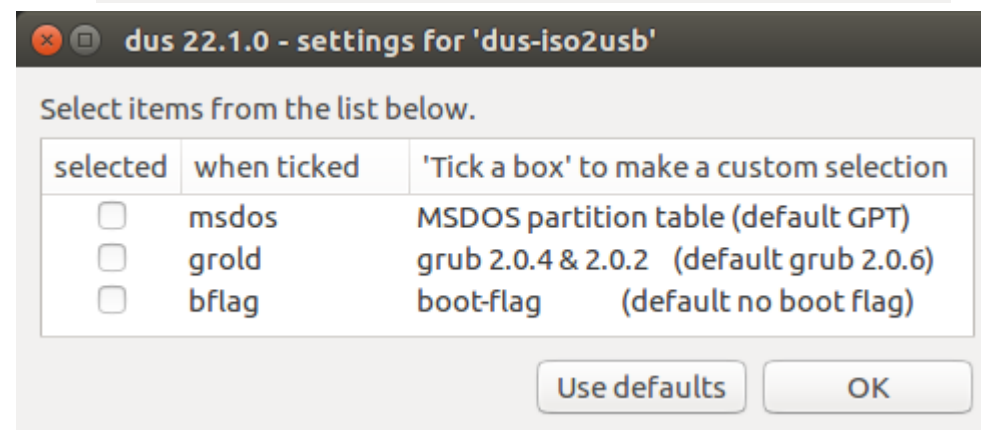
Use the cloning method for live (live-only) drives works with most Linux distros (when the iso file is a hybrid iso file)



Use dus-persistent or mkusb-plug for persistent live drives (likely to work with Debian and distros that are very similar to Ubuntu or Debian)



**Use dus-iso2usb when problems with the standard methods above and try with different settings for example boot-flag**





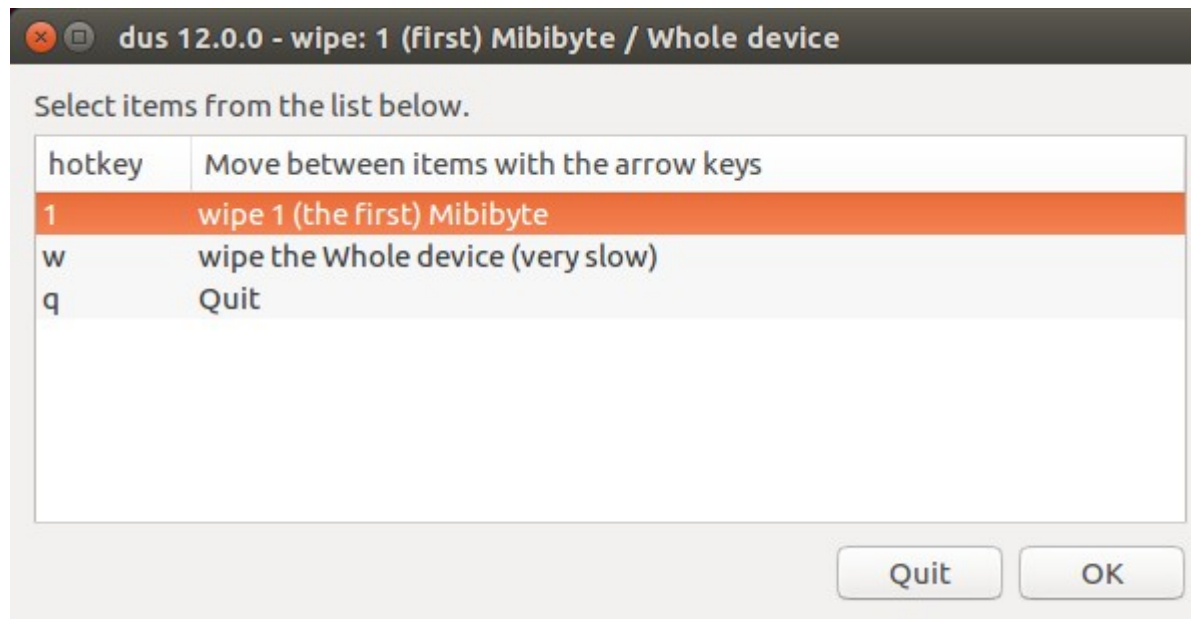
# dus-iso2usb 2(2)

- **If it is difficult to boot your computer from a cloned USB pendrive or memory card, please test various settings with**
  - the new dus-iso2usb
  - the classic dus-persistent
  - and maybe also some different drives (because some USB drives can be difficult to boot from).
- User friendliness: Other settings are fixed when msdos and/or boot-flag is selected
- Works with iso files of Ubuntu and the Ubuntu community flavours, Kubuntu, Lubuntu, Ubuntu Budgie, Ubuntu Kylin, Ubuntu MATE, Ubuntu Studio and Xubuntu.
- With other Linux distros you should
  - use the cloning method for live (live-only) drives - works with most Linux distros (when the iso file is a hybrid iso file)
  - use dus-persistent or mkusb-plug for persistent live drives
    - likely to work with Debian and distros that are very similar to Ubuntu or Debian.



# Wipe the first megabyte (mibibyte)

- If you want to re-use a USB device that has been used with an iso file system, iso9660, you should wipe the first megabyte (actually mibibyte) with dd, overwrite with zeros. Otherwise grub-install and some partitioning tools don't want to write into the head of the drive, because they see the CD file system and are confused.
- **You need *not* wipe the drive before cloning or restoring with mkusb.** It will be done automatically.





# Restore to a standard storage device

The screenshot shows two windows from the 'dus 12.3.2' application. The top window, titled 'dus 12.3.2 - Install / Backup / Restore / Wipe', displays a menu with the following items:

hotkey	description
	Move between items with the arrow keys
i	Install (make a boot device)
s	restore to a Standard storage device
w	Wipe a device (drive)
b	Backup persistent live home
r	Restore persistent live home
a	About
q	Quit (exit from dus)

The 's' option is highlighted. The bottom window, titled 'dus 12.3.2 - Enter label', prompts the user to 'Enter label for the FAT32 file system (max 11 characters)'. It features an empty text input field and two buttons: 'No label' and 'OK'. The top window also has 'Quit' and 'OK' buttons.



# Manage persistent live system

- ***Backup*** and ***restore*** of the /home directory in an Ubuntu casper-rw partition
- ***Upgrade*** persistent live system
  - Restore works to another persistent live drive made from a current daily iso file, and also to another version of Ubuntu
  - So you can upgrade (or downgrade) your persistent live system: use **mkusb** to create a new system from another (typically newer) iso file, and restore from the backup to this other persistent live system.



# Backup persistent live home 1(2)

Select items from the list below.

hotkey	Move between items with the arrow keys
i	Install (make a boot device)
s	restore to a Standard storage device
w	Wipe a drive
<b>b</b>	<b>Backup persistent live home</b>
r	Restore persistent live home
a	About
q	Quit (exit from dus)

**Backup to directory/file**

Name:

Home Desktop **Documents** Downloads Music Pictures Videos casper-rw Ubuntu 16.04... usbdata Xubuntu... Other Locatio...

ubuntu Documents

Name	Size	Modified

**Final checkpoint**

Device: /dev/sdc OS: Xubuntu Core 18.04 - amd64  
File: /home/ubuntu/Documents/mkusb-backup-home.tar.gz  
Action: **backup**

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sdc5	11G	86M	9.8G	1%	/tmp/tmp.PTxEBil8xN

Are you sure that you want to continue?

No Yes



# Backup persistent live home 2(2)

The screenshot shows a terminal window titled "mkusb" with a list of files being backed up. The files include `home/xubuntu/.profile`, `home/xubuntu/.Xdefaults`, `home/xubuntu/Desktop/`, `home/xubuntu/Desktop/ubiquity.desktop`, `home/xubuntu/hej`, `home/xubuntu/Pictures/`, `home/xubuntu/Downloads/`, `home/xubuntu/.xscreensaver`, `home/xubuntu/.bashrc`, `home/xubuntu/.sudo_as_admin_successful`, `home/xubuntu/.gnupg/`, `home/xubuntu/.gnupg/private-keys-v1.d/`, `home/xubuntu/.ICEauthority`, and `home/xubuntu/Documents/`. The terminal output shows the backup process for `/home` from `'casper-rw'` to the file `/home/ubuntu/Documents/mkusb-backup-home.tar.gz`. The device `/dev/sdc` is identified as `Extreme` with a size of `14.9G`. The OS is `Xubuntu Core 18.04 - amd64`. The terminal shows `Please wait for sync (flushing file system buffers to the device)` and `Done :-)`. A dialog box titled "Backed up :-)" is displayed, showing an information icon and the text "Backed up upper/home in 'casper-rw'", with an "OK" button.





# Restore persistent live home 1(2)

dus 12.3.2 - Install / Backup / Restore / Wipe

Select items from the list below.

hotkey	Move between items with the
i	Install (make a boot device)
s	restore to a Standard storage
w	Wipe a drive
b	Backup persistent live home
r	Restore persistent live home
a	About
q	Quit (exit from dus)

Restore from directory/file

ubuntu Documents

Name	Size	Modified
mkusb-backup-home.tar.gz	73.0 kB	06:31

Final checkpoint

Device: /dev/sdc OS: Xubuntu Core 18.04 - amd64  
 File: /home/ubuntu/Documents/mkusb-backup-home.tar.gz  
 Action: **restore**

Filesystem	Size	Used	Avail	Use%
/dev/sdc5	11G	86M	9.8G	1%

Are you sure that you want to continue?

Restore /home to casper-rw

Device: /dev/sdc OS: Xubuntu Core 18.04 - amd64

This 'casper-rw' partition is not clean.

It may work, but chances are better if you create a new persistent live drive or remove all directories and files except 'lost+found' from this one. After that you can restore the home directory.

Do you want to try anyway?

No Yes



# Restore persistent live home 2(2)

The screenshot shows a terminal window titled "mkusb-dus console - Do USB Stuff" with the following output:

```
home/xubuntu/.Xdefaults
home/xubuntu/Desktop/
home/xubuntu/Desktop/ubiquity.desktop
home/xubuntu/hej
home/xubuntu/Pictures/
home/xubuntu/Downloads/
home/xubuntu/.xscreensaver
home/xubuntu/.bashrc
home/xubuntu/.sudo_as_admin_successful
home/xubuntu/.gnupg/
home/xubuntu/.gnupg/private-keys-v1.d/
home/xubuntu/.ICEauthority
home/xubuntu/Documents/
'/home' in 'casper-rw' restored from the file
/home/ubuntu/Documents/mkusb-backup-home.tar.gz
to the device
name: /dev/sdc
model: Extreme
size: 14.9G
OS: Xubuntu Core 18.04 - amd64
Please wait for sync (flushing file system buffers to the device)
umount: /dev/sdc1: not mounted
Done :-)
```

A dialog box titled "Restored :-)" is displayed in the foreground with the message "Restored home to upper in 'casper-rw'" and an "OK" button.



# References

- See the tutorials in the Ubuntu Forums and YouTube for more details

[Howto make USB boot drives](#)

[Backup and restore the /home directory in casper-rw partitions of mkusb persistent drives](#)

[YouTube tutorial by ventrical part 1](#)

[YouTube tutorial by ventrical part 2](#)

- alongside the previously mentioned links

<https://help.ubuntu.com/community/mkusb>

<https://help.ubuntu.com/community/mkusb/persistent>

<https://help.ubuntu.com/community/mkusb/plug>

<https://help.ubuntu.com/community/mkusb/dus-iso2usb>

<https://phillw.net/isos/linux-tools/mkusb/>

- and read this wiki page with methods and tools to create USB boot devices/drives/sticks

<https://help.ubuntu.com/community/Installation/FromUSBStick>