Preserve Old /home Partition with New Install of Linux Mint 22

By kalwisti

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Abstract

This tutorial explains how to install a new version of Linux Mint, while preserving an existing `/home` partition that you want to reuse. This method's advantage is that you can reinstall root (/ aka the system partition) and leave your `/home` partition as is, thus allowing for an easy upgrade path.[1]

The instructions and advice in this guide were gathered from a variety of online sources —primarily the Linux Mint Forums —and from personal experience. I have now used this procedure three times (on two different desktop PCs) and it has worked well.

Although I wrote this partly to document the steps I followed, I am making it available in case it might be helpful to others and because this information is scattered in threads throughout the Mint Forums. I believe this procedure is safe—if done carefully—and will not damage your system.

However, there are some potential risks involving old configuration files in your `/home` directory as well as configuration files for older versions of software.

Some users recommend the approach of making a backup copy of your `/home` directory, then doing a complete fresh install. Afterwards, you copy back the files that you need.

I do not intend this to be a “one size fits all solution,” so **use this at your own risk**. Carefully evaluate your options and choose the one that best suits your needs.

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[1] Some users refer to this method as a "dirty" install.

Ground Rules: Basic Guidelines

- To use this procedure, you must have `/home` on a separate partition from root (/).
    - If you have Linux Mint installed with just a single root (/) partition with `/home` as a folder within it, then a re-install will overwrite the existing contents of `/home`.
- To reduce the chance of configuration file conflicts / incompatibilities, I recommend that you do not change your desktop environment (DE), i.e., do not switch from Xfce to Cinnamon (or vice versa).
- Do **not** “mix and match” various Linux operating systems on your `/home` partition. For example, if you are changing from Mint to Debian, the differences in system configuration files may cause a system crash or make your system unstable.

> It is **absolutely essential** that you first make a **backup** of all existing data in your `/home` partition before reinstallation. In case something goes wrong, you can recover by copying your backed-up data to the new `/home` partition.

Specifics of the Computer's Disk Setup

For clarity's sake, here is some background information on the computer's dual-disk setup, since this influenced how/where the GRUB2 bootloader was installed.

- Dell Optiplex 7050 desktop PC [manufactured 2017]
    - Secure Boot is disabled
- Two SSDs:
    - Western Digital 500 GB SSD — with Windows 10 only
        - With GPT partition scheme and EFI system partition [`/dev/sda1`, 100 MiB]
    - Samsung 1 TB SSD — with Mint 20.3 Cinnamon only
        - With GPT partition scheme and EFI system partition

Below is the partition scheme of the Samsung SSD with Mint:

Partition	Mount Point	File System	Size
sdb1	`/boot/efi`	fat32	620 MiB
sdb2	/	ext4	47 GiB
sdb3	`swap`	linux-swap	14.9 GiB
sdb4	`/home`	ext4	869 GiB

Preliminary Steps

The backup, to an external hard drive (or something similar), should include the following:

- `bookmarks.html` (Firefox in my case)
- E-mail profile folder (Thunderbird in my case)
- Documents
- Downloads
- Pictures
- Videos
- Music
- Anything else that is important (e.g., Finances folder, KeePass database)

I deleted my Timeshift snapshots since I decided to take the plunge and replace Mint 20.3 with Mint 22. However, instead of deleting the entire `/home/timeshift` directory, I opened Timeshift and deleted my existing snapshots from within the app.

Installation Procedure

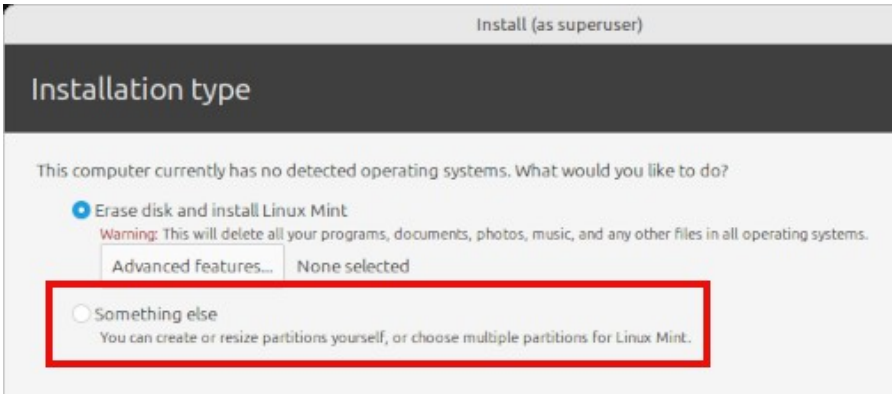
These instructions describe how to install Mint 22 (Cinnamon ed.) on the dual-disk Optiplex 7050, and preserve the existing `/home` partition (from Mint 20.3 Cinnamon).

The scenario below involves **four existing partitions** on the current installation:

(If your computer has only one SSD — or one HDD or one M.2 NVMe SSD — you may adjust the designations accordingly: `sda1, sda2` ... `nvme0n1p1`, `nvme0n1p2`, etc.)

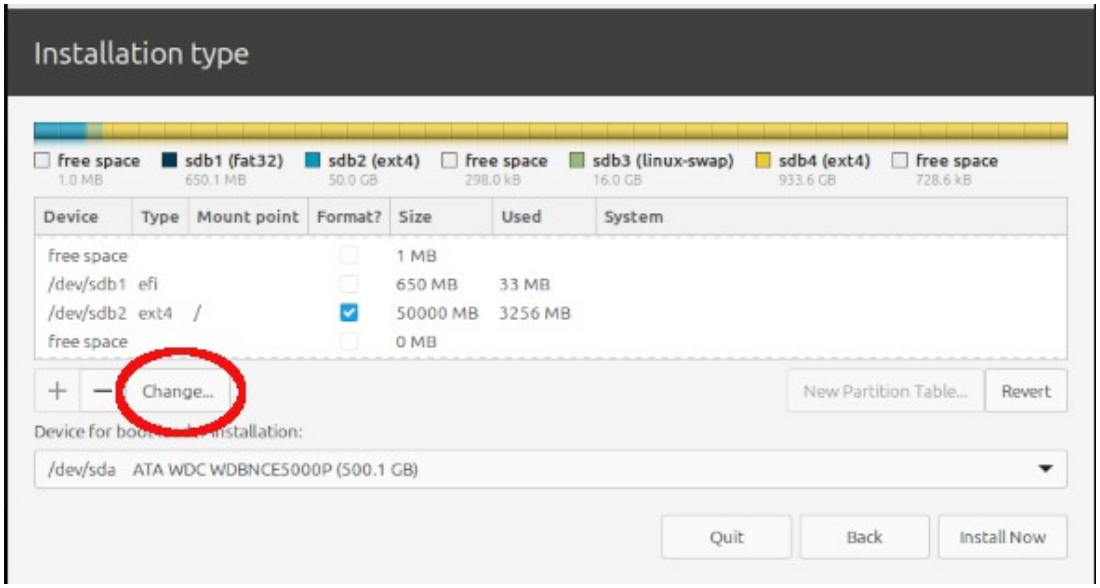
sdb1 for `/boot/efi` (EFI system partition)
sdb2 for root (/)
sdb3 for `swap`
sdb4 for home (**`/home`**)

When you reach the partitioner stage of the installation, choose **Something else** and click on **Continue**:

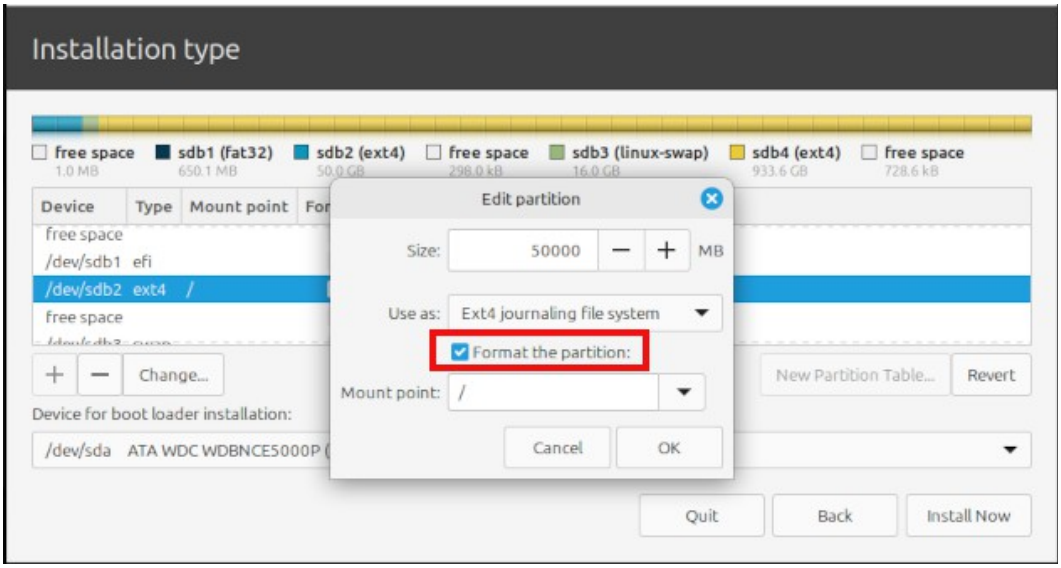


For **sdb2** (existing root partition):

Highlight the partition and click on the **Change** button:



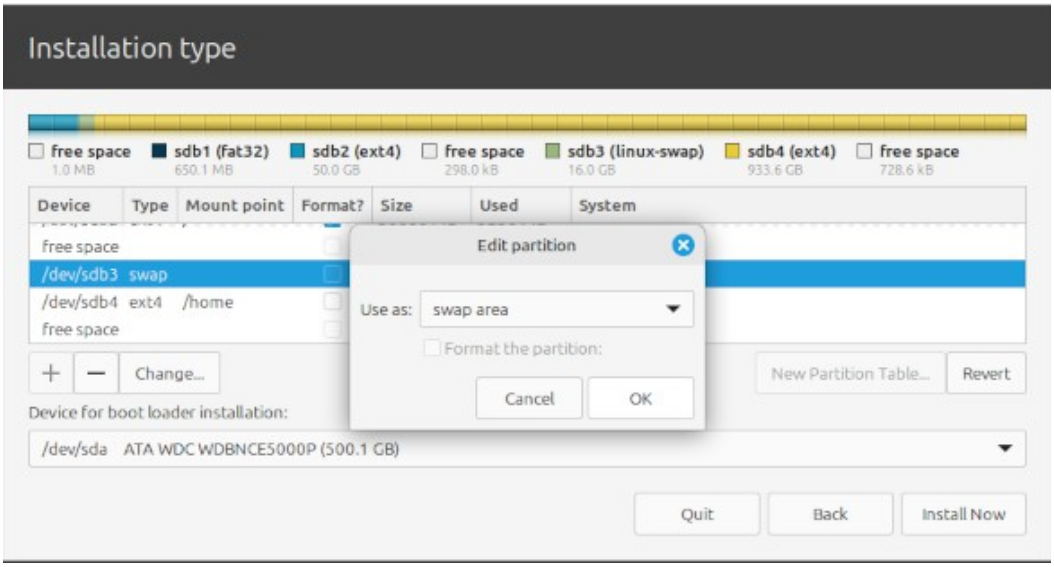
Select **Leave the size the same**, select **Use as: ext4**, check/tick the box for **Format the partition**, select " **/** " as the **Mount point** and then click on **OK**.



Please note:
If you originally used the **ext3** file system or **something different from ext4**, you **must** continue to use the same format.

For **sdb3** (existing swap partition):

Do not touch it at all.



If you have a dual-disk setup that multi-boots different Linux distros, carefully check that the installer does not try to format the swap partition on your second drive.

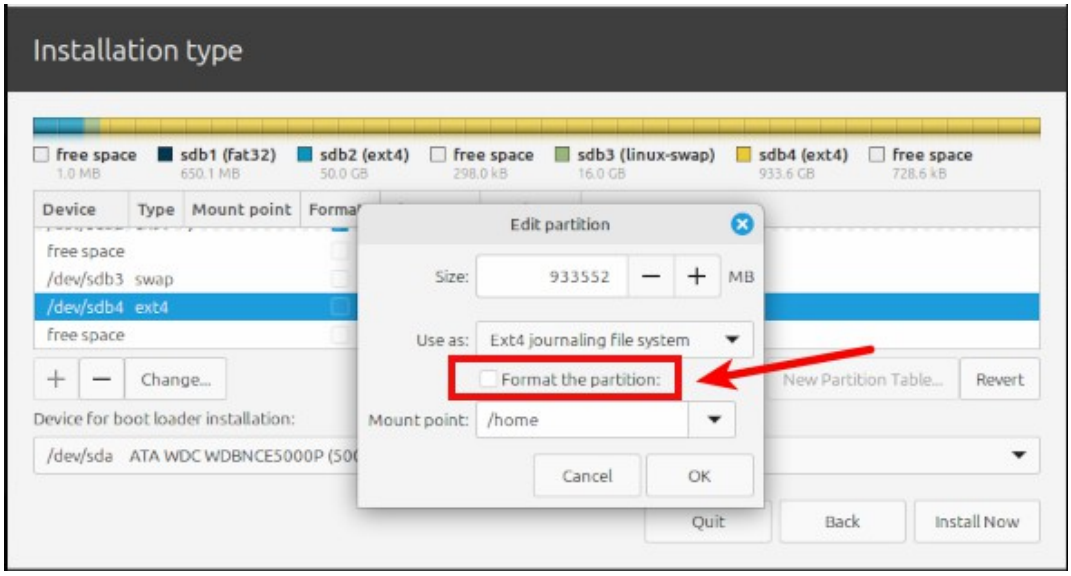
For **sdb4** (existing `/home` partition):

It is essential to make some changes. Do **NOT** ignore it, otherwise your home partition will **not** be preserved.

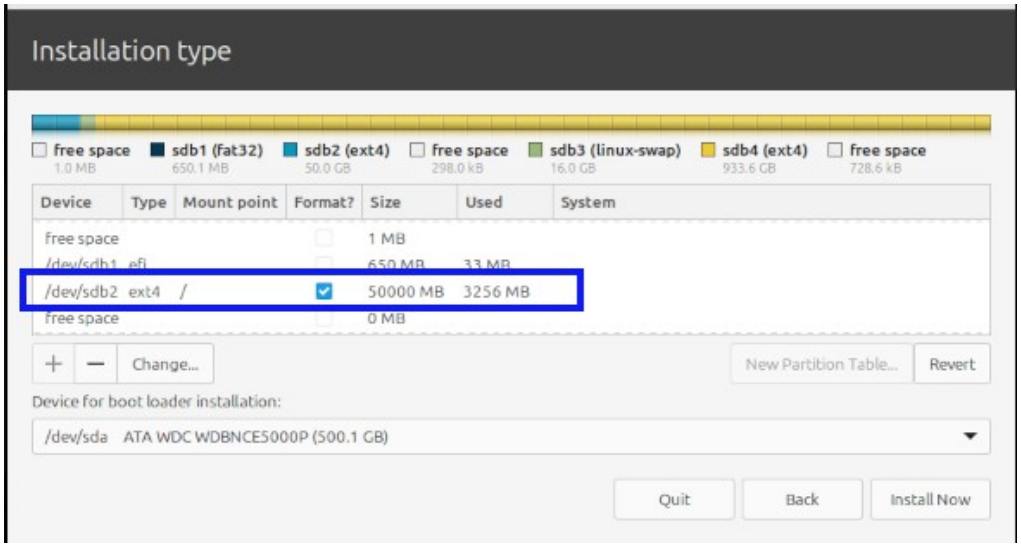
Highlight the partition, click on the **Change** button, select **Leave the size the same**, select **Use as: ext4** (*see the warning above about file system type*), do **NOT** check/tick the box for **Format the partition**.

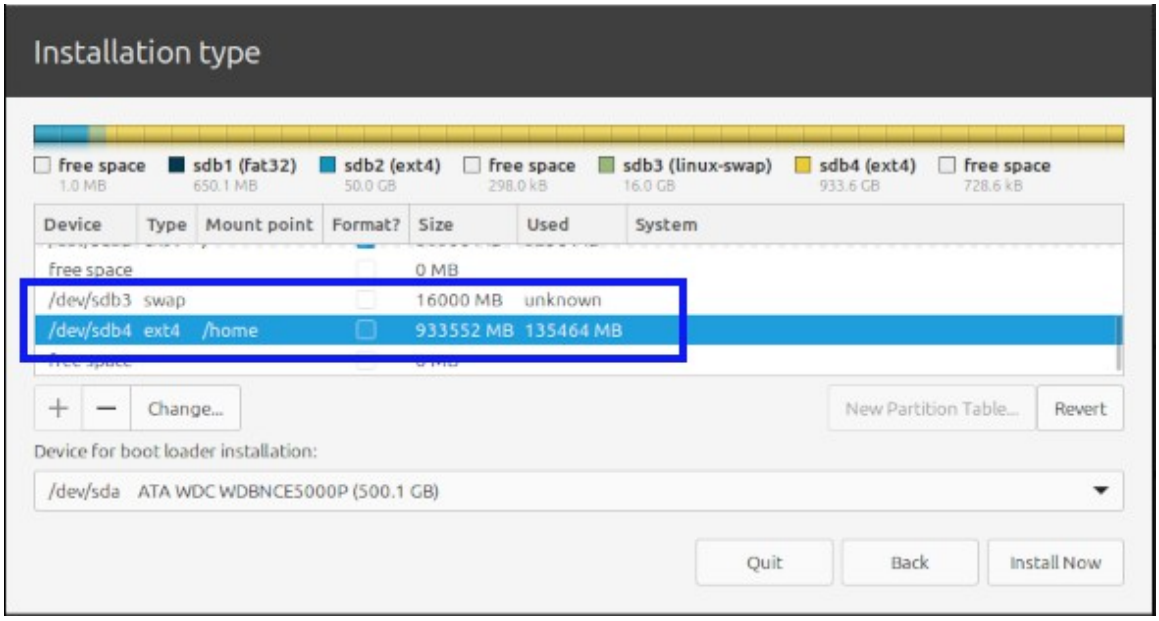
Leave the checkbox empty in the "**Format**" column of the disk partition layout table**.**

Select **/home** as the **Mount point** and then click on **OK**.

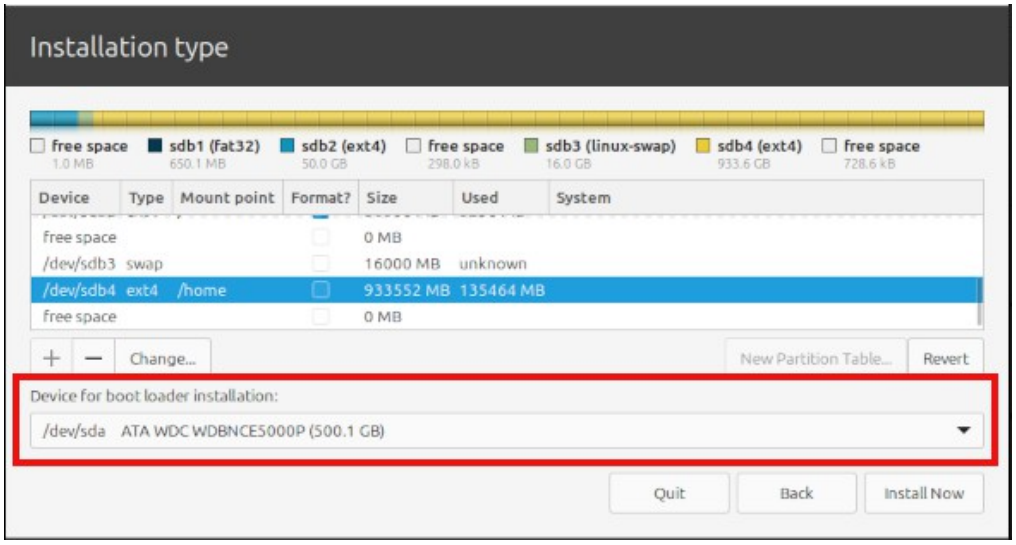


At this point, you should carefully review the disk partition layout screen. Make sure that the partitioner is set to your intended specifications: to format the root partition (**sdb2**), but to leave the swap partition (**sdb3**) and the `/home` partition (**sdb4**) untouched:





Next, select **sda** as the Device for boot loader installation and click on **Install now**. (Don't worry ... The installation will not actually begin until you acknowledge the pending changes to the partitions. That dialog box is shown below in section 5.)



Note: The Mint installer—by default—installed the GRUB2 boot loader to **sda** (specifically, `/dev/sda1` [its EFI system partition]). In my scenario, this is the Western Digital SSD which houses Windows 10. However, I would have preferred to install GRUB2 to **sdb** — the Samsung 1 TB SSD — and more specifically, to `/dev/sdb1` (its EFI system partition).

Luckily for me, this did not cause a problem on the Dell Optiplex. There is nothing wrong with the two OSes (Windows and Mint) sharing an EFI partition. Windows can handle/recognize multiple EFI entries.

(When the installation finished and I rebooted the PC, Mint's GRUB2 had taken control of the boot. Windows is offered as a choice in the GRUB2 menu. During the two years that Mint 20.3 was running on the Optiplex, Windows updates never 'killed' the GRUB2 bootloader.)

Brief Interruption: The Installer's EFI System Partition Bug

If your computer supports UEFI firmware (most PCs manufactured in the last ten years have UEFI), if the system is booted for UEFI mode installation, and your PC has two disks present, the situation becomes more complicated. The installer will put GRUB2 on the *first* EFI partition it finds—irrespective of what you tell it.

I will discuss this further in section 6.

Finalizing the Installation

When the dialog box ***Write the changes to disks?*** appears, click on **Continue** to carry on with

the rest of the installation procedure. This is your last chance to inspect the pending changes before they are written to disk:

If everything goes as planned, all your personal data, bookmarks, e-mail and individual settings such as Screensaver and NumLock preferences, etc. will also be preserved.

Decide Whether or Not to Delete Hidden Config Files

There is another technical issue which you should consider: whether to retain existing hidden configuration files (aka ‘dotfiles’),[2] or delete them.

Many applications store configuration(s) in hidden files in your `/home` directory (`.config`, `.local`, etc.). These existing configuration files may be incompatible with the new system or applications, potentially causing issues or unexpected behavior (such as crashes or instability). Config files for older versions of software may not work properly with newer versions installed on the fresh system.

I have not personally experienced any such incompatibility; however, I mention it for reasons of completeness.

• If you reuse the same username (as discussed in section 7), your existing dotfiles will be reused. (I have adopted this approach and not had any problems.)

• If you are concerned about possible problems, you may want to delete the hidden configuration files in your `/home` directory before first login to avoid potential conflicts with the new system.

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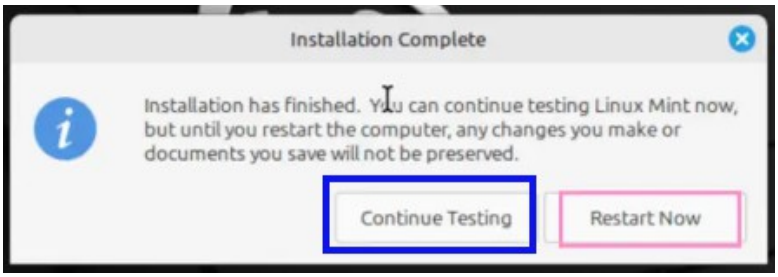
[2] They are called "dotfiles" because their filename is preceded by a dot (**.**)

- If you decide to delete your hidden config files, once the installation finishes, choose the **Continue Testing** option from the dialog below:



- Using the file manager — Nemo [Cinnamon DE], Thunar [Xfce] or Caja [MATE] — mount and open your existing `/home` directory.

- Type Ctrl+H to reveal the hidden dotfiles. Delete them now, before you reboot to your new install. (The config files will be re-created when you next log in.)

- Remember to unmount/safely eject your `/home` directory.

If you wish to reuse your existing hidden configuration files, just leave them untouched and click on the **Restart Now** button to reboot your computer.

Back to the Installer Bug

You should be aware of the bug specific to Ubuntu's Ubiquity installer, so that you will not be taken by surprise. This bug in Ubiquity affects Ubuntu derivatives such as Mint, Kubuntu and Zorin.[3]

The bug was first reported in 2014 and is still present today. To read about it in more detail, visit:

https://bugs.launchpad.net/ubuntu/+source/ubiquity/+bug/1396379
"Installer Uses First EFI System Partition Found Even When Directed Otherwise."[4]

To summarize, if your system is booted for UEFI mode installation and if you are installing Mint to a separate drive, the Ubiquity installer will put GRUB2 in the *first* EFI partition that it finds (in my case, `/dev/sda1`) — even if you tell the installer to place GRUB2 on disk *sdb* (specifically, `/dev/sdb1`).

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[3] As you might imagine, this is problematic because these distros are often recommended to neophyte Linux users. They might be shocked to encounter this with a fresh Linux installation — especially if they are still dual-booting with Windows.

[4] The discussion is technical and somewhat over my head. However, I saw a reader comment that helped clarify the problem. The issue is not so much that the installer is putting GRUB on the wrong disk; rather, it is placing the EFI boot files on the wrong partition (on the wrong disk). Those EFI files are loaded by the operating system before GRUB, and then they load the actual GRUB.

There are a couple of solutions to the installer's behavior:

- Physically disconnect the Windows drive before installing Mint to your second disk.
  - After the installation is complete, shut down, reconnect the Windows drive and run
    - `$ sudo update-grub`
    - from within Mint to update GRUB2 and add Windows as a boot entry.

- If this is difficult or impractical (for example, if you have an M.2 NVMe SSD):
    - Using GParted on your Mint Live USB stick, disable the `esp` and `boot` flags on the EFI partition in your Windows drive. Re-enable them after installing Mint.
    - Doing this means the installer will not find Windows during installation. If you want a GRUB2 menu on boot (giving you the choice of Mint or Windows), wait until the installation finishes. Then boot Mint, open a terminal and type the command:
    - `$ sudo update-grub`

LMDE 6 Installer

To further complicate matters, LMDE (Linux Mint Debian Edition) 6 has a completely different installer than the Mint Main Edition. Therefore it does not have the Ubiquity EFI bug.

If you choose `sdb` as the location for GRUB2, the LMDE installer will actually put the bootloader on `/dev/sdb` (specifically, in the `/dev/sdb1` EFI system partition).

Post-Installation Steps

These are suggestions/recommendations:

- Perform the initial system update.

- If you wish to switch to a local mirror, do that now. Open the Mint Update Manager > from the **Edit** menu > choose **Software Sources** > then go to **Mirrors**.

- If your system has multiple user accounts, set them up. *LQ.org* user Jeremy Boden pointed out an important detail:

You must re-create the same user names, in the same order as they currently exist.

In my case, the old Mint 20.3 system had two users:

- (1st user) `Beverly P*****  /home/beverly  #1000`

- (2nd user) `david p******  /home/david  #1001`

Please pay close attention to such details as **Account Type** (Administrator or Standard), case-sensitivity, what form of name you chose for the **Full Name** (`First Name + Surname`, etc.), the **Username** and, of course, the password(s).

If you are unsure what was done originally, the user to UID (User ID) correspondence is found in the `/etc/passwd` file. Open a Terminal and type: `$ cat /etc/passwd`

I have pasted sample output below (truncated because the file consists of forty-eight lines):

```
david@beverly-OptiPlex-7050:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin

bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
[ ... ]
beverly:x:1000:1000:Beverly P*****,,,:/home/beverly:/bin/bash
sssd:x:121:126:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
david:x:1001:1001:david p******,,,:/home/david:/bin/bash
```

To add additional users to your system, from the main Mint menu > go to the **Administration** category > then select **Users and Groups**.

If you would like a refresher, this brief video tutorial[5] demonstrates how to add users via the GUI method: https://tinyurl.com/yckhdzcm

The first account created on the system is an Administrator account; it has `sudo` rights. A Standard account holder cannot add or remove any programs, nor can it run the Mint Update Manager unless s/he is a member of the `sudoers` group.

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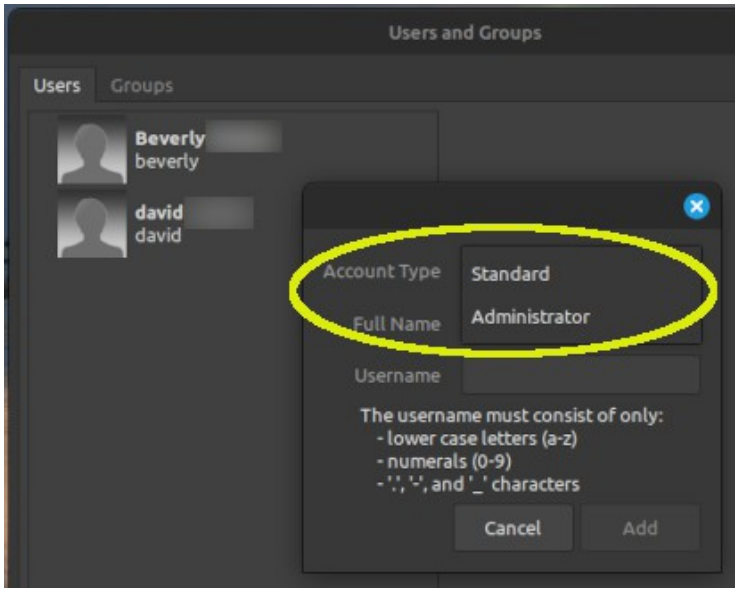
[5] FreeGeekMothership. "Linux Mint 20: Add Additional Users." *YouTube*, 18 Nov. 2020. (2 min., 26 sec.)
If you want to delve further into user and group management, Jay LaCroix created two excellent tutorials on his *Learn Linux TV* channel. He focuses on using the command line to accomplish these tasks.

Managing Users: https://tinyurl.com/29fyp38j

Managing Groups: https://tinyurl.com/4p8cmaw5



- Reinstall extra apps that were installed on my Mint 20.3 system but are not part of the default Mint 22 programs, e.g., GIMP, gThumb, Chrome, Geany, etc.

- Apply the tweaks/tips suggested by Pjotr's Easy Linux Tips Project:

Cinnamon edition tips: https://easylinuxtipsproject.blogspot.com/p/first-mint-cinnamon.html

MATE edition tips: https://easylinuxtipsproject.blogspot.com/p/first-mint-mate.html

Xfce edition tips: https://easylinuxtipsproject.blogspot.com/p/first-mint-xfce.html

- Use Timeshift to make the first system snapshot.

Acknowledgments

I would like to thank numerous people for providing the background information which enabled me to successfully preserve my existing `/home` partition as I installed Mint 22.

User `beachboy2` from the *LinuxQuestions.org* (LQ) forum outlined the basic procedure.[6]

[6] "Preserving Your Existing Home Partition When Installing a New Distro." *LQ.org*, 21 Mar. 2017. https://tinyurl.com/y26hduwu

Jeremy Boden from *LQ.org* posted a reminder about recreating the same user names, in the same order as they presently exist, after the installation finishes.[7]

Of course, the Linux Mint Forums have excellent advice and tips. Users `AndyMH`, `Xenopeek`, `arvy` and `Moem` shared helpful suggestions about this topic. Forum moderator `SMG` read through my tutorial and offered some comments (which I have incorporated in this revised version).[8]

User `MintAlone` from the *linuxmint* subreddit wrote a succinct explanation of the Ubiquity Installer (multi-disk) EFI Partition bug, as well as two possible solutions.[9]

Good Luck and Enjoy using Linux Mint!

[7] "Home Directory and Clean Install of LM 18.1." *LQ.org*, 6 Apr. 2017. https://tinyurl.com/26kfutsm

[8] https://tinyurl.com/rnmyhpef

[9] "Can You Use Two Different SSDs on the Same PC to Dual-Boot Mint on a PC That Also Has Windows 11?" *r/linuxmint*, 2023. https://tinyurl.com/mrxznrtc