Salix 15.0 Installer:
Standard Edition (64-bit)

By gaucho

Last Updated: 22 Nov. 2024

This guide is unofficial but I hope that it will be helpful to new users. If you read through this guide before installing Salix 15.0, you will have an idea of what to expect during the process.

The 64-bit Salix ISO (Salix64 Xfce 15.0) can be downloaded from https://salixos.org/download.html. It is the "traditional" ISO that boots into the standard Salix installer.

It is not a Live image; however, if you want to try out Salix in a Live environment, a SalixLive64 Xfce 15.0 ISO is available. (You may install SalixLive64 Xfce to your hard disk using the Salix Live Installer [SLI] – which is completely different from the standard Salix installer.)

1. Background

Salix 15.0 was released on 5 Sept. 2022, seven months after the release of Slackware 15.0 (on 2 Feb. 2022). `gapan` produced a series of prereleases from April 2022 through August 2022; the Salix community tested them, offering feedback and suggestions.

Although the installer has received several updates under the hood, on the surface it is still the same text-based installer that Salix has always used. It is a modified version of the `ncurses` interface used by Slackware's installer. (It will immediately be familiar to anyone who has installed Slackware before.)

The installer might look intimidating — but don't fear. The installer presents you with a set of dialogs where you must make intelligent choices, including partitioning. In addition, Salix follows Slackware's use of LILO (Linux Loader) as the bootloader rather than GRUB.[1] If you take time to read the installer's dialogs, and work carefully and methodically, you should not have any surprises.

There is a (minor) difference between non-UEFI and UEFI installations. If you install in Legacy mode (BIOS / MBR setup), the `cfdisk` utility is used at the partitioning stage and LILO is the default boot loader.

If your computer supports UEFI and you install Salix in UEFI mode, the disk partitioner utility is `cgdisk` and ELILO (EFI Linux Loader) will be used as the boot loader.

2. Installer Walkthrough

All of the screenshots were taken inside virtual machines using Oracle VirtualBox ver. 7.0.

3. If your computer does not support UEFI

And you need to install in Legacy mode (BIOS / MBR setup), follow the instructions below.

If your computer **supports UEFI**, jump to Section 4.

[1] LILO (Linux Loader) is a boot loader for Linux. LILO was the default boot loader for most Linux distributions in the early days. When Slackware was launched (1993), GRUB did not exist.

Although LILO development ended in 2015, LILO still "just works" and its configuration is simpler than GRUB2. So Slackware / Salix has continued to use LILO for historical reasons. In addition, changing from LILO would require rewriting the Slackware install script to incorporate GRUB (when there are probably a lot more important things for Patrick Volkerding and his small team to work on).

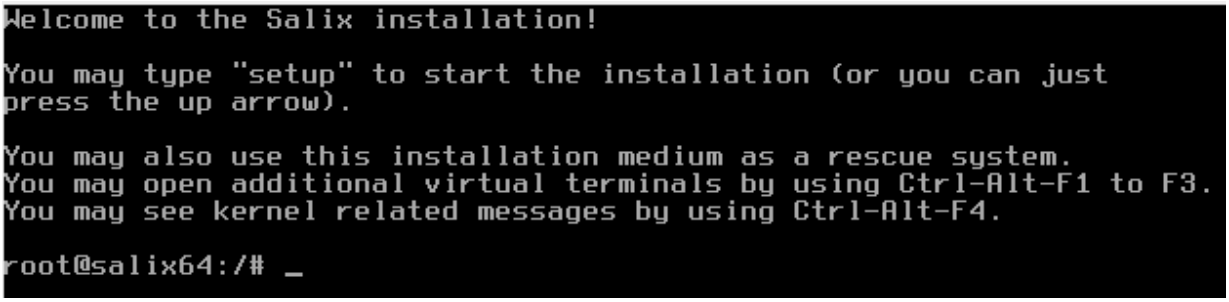
ELILO (EFI Linux Loader) is the LILO variant for EFI-based PC hardware. The ELILO project was orphaned in 2014; however, ELILO is complete and therefore (like LILO) does not require any maintenance.

3.1. Preliminaries

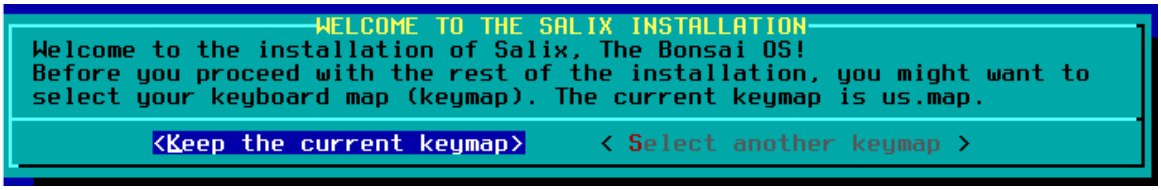
You first select the language to be used during the installation process — not the language of the final, installed OS. (You will choose that in a later step. See Section 11 for more details.)

- I chose “Install Salix 15.0 in English (USA)”:

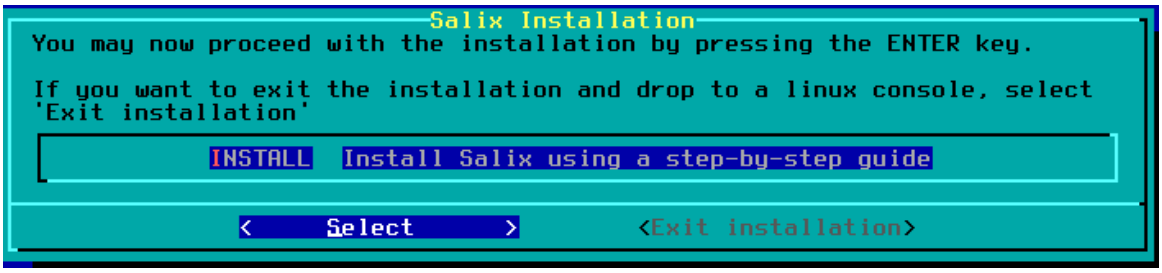
- At the command prompt, type “ setup “ to continue:



- “Keep the current keymap” [`us.map`]:



- Install – “Install Salix using a step-by-step guide”:

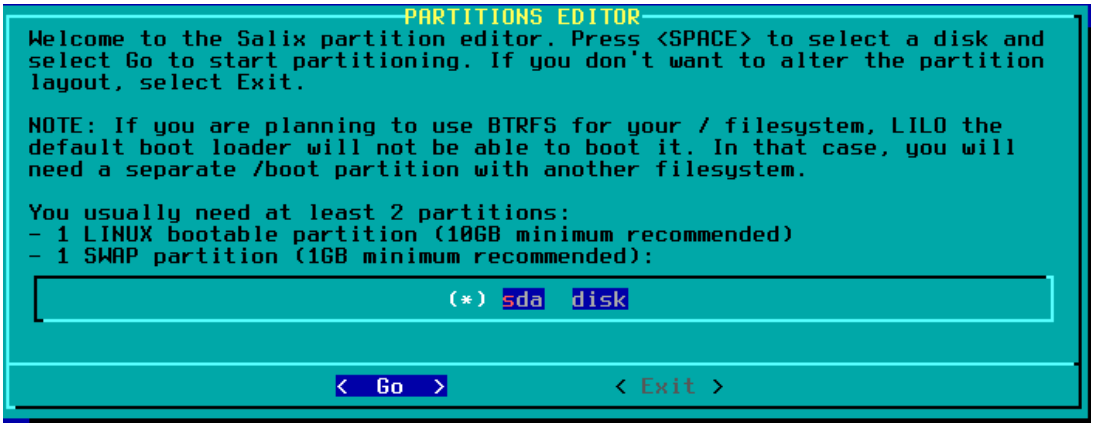


- Then, press “Select”.

3.2. Partitions editor

- Select: `( ) sda disk` (or the appropriate target disk for your computer):

Tip: Use the Space bar to select a disk ; it should look like " `(*)` ":

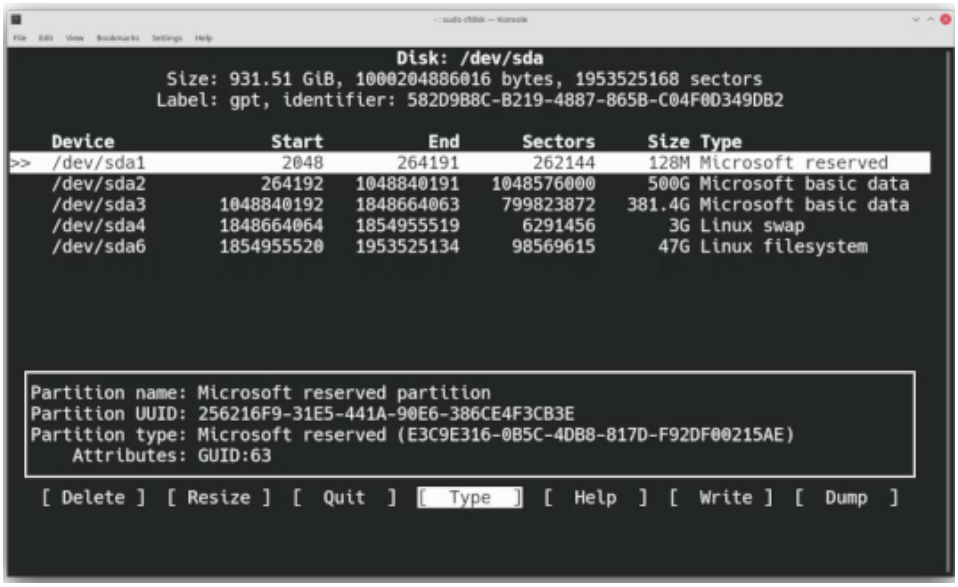


- Then, press: "Go".
- This will start up the `cfdisk` utility.

Instead of pasting in screenshots of every stage of the partitioning process, I recommend that you consult the resources in Section 17.2 and/or watch `cfdisk` in action, in the YouTube videos listed in Section 17.1.

- Begin by selecting the label type: "dos":

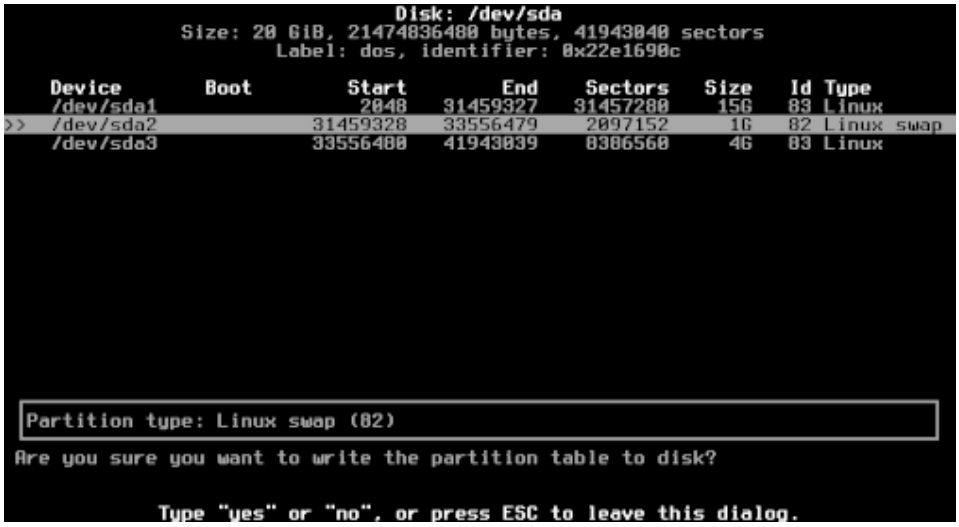
- The `cfdisk` interface will look something look this:



- For this virtual machine, I created a simple partitioning scheme with a rather small swap partition and a small `/home` partition:

(for root)	15 GB	primary	Type: `Linux`
(for swap)	1 GB	primary	Type: `Linux swap`
(for `/home`)	4 GB	primary	Type: `Linux`

- When disk partitioning is finished, you must press the "Write" option to write the changes to your disk.
- When `cfdisk` asks "Are you sure you want to write the partition table to disk?" Answer "yes".



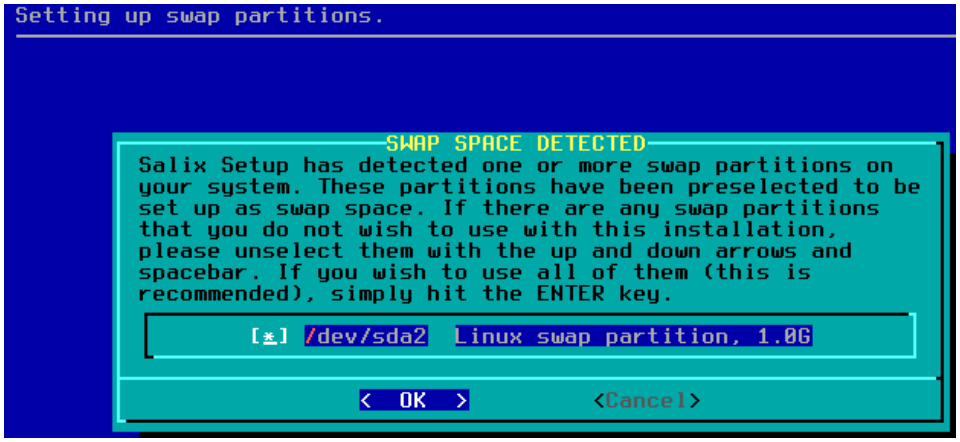
- Then, select "Quit".

> **Suggestion**: If you are uncomfortable with a command-line partitioning tool, an alternative approach is to use GParted in a Live environment to partition your disk beforehand. GParted can handle/manage both MBR disks and GPT disks, plus it has a friendlier GUI (in my opinion). GParted is available on the SalixLive64 Xfce ISO, GParted Live as well as on light-weight, portable distros such as Puppy Linux.

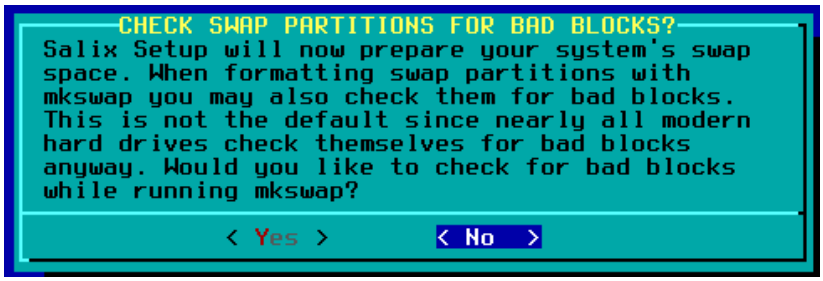
Tip regarding the root partition's size: In my VirtualBox full installations, a baseline for the root partition was 11 GB. This includes a fully updated system, with all multimedia codecs installed as well as the update to Xfce 4.18 packages. (On my current Salix system, the root partition is 50 GB [with several Flatpak apps as well as a full TeX Live install] and it is approximately 50% full.)

3.3. Format partitions / Assign mount points

- The next step involves setting up the swap partition.
- The installer should auto-detect your swap and display the message "Swap space detected":

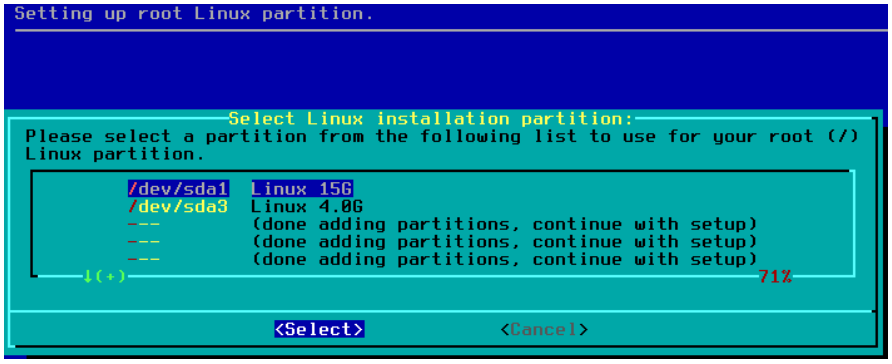


- Then, press “OK”.
- Check swap partitions for bad blocks? I chose “No”.



- The swap space will be configured and added to `/etc/fstab`:

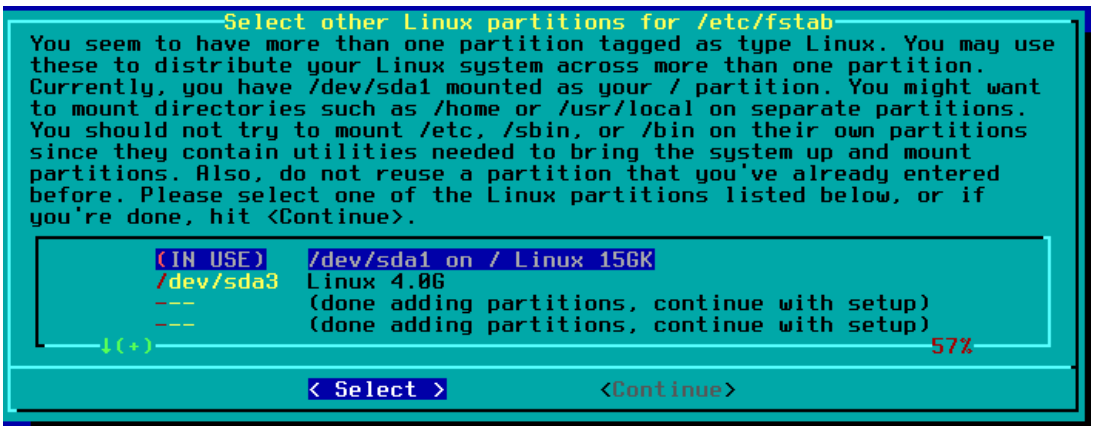
- Then, choose “OK”.
- Now you will set up the root Linux partition:
  - I designated `/dev/sda1` as my root partition:



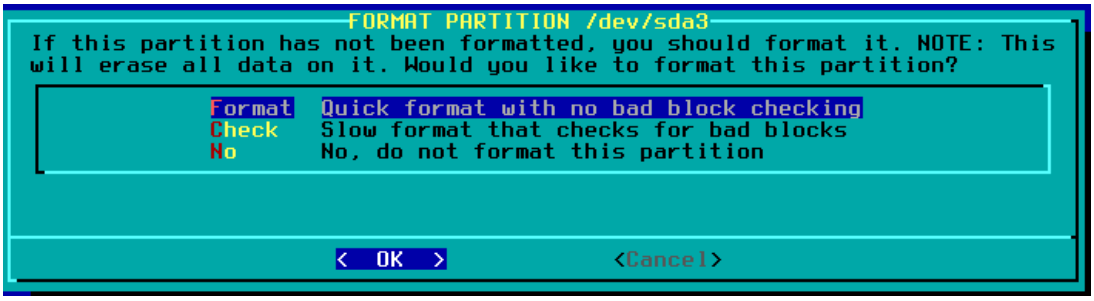
- Then, press “Select”.
- Do you want to format `/dev/sda1`?
  - I chose “Format with no bad block checking”:

- Then, press “OK”.
- Select the file system that you want to use for the root partition.
  - I chose “`ext4`”:

- Then, press “OK”.
- Select other Linux partitions for `/etc/fstab`:
  - I chose “`sda3`” [4 GB]:

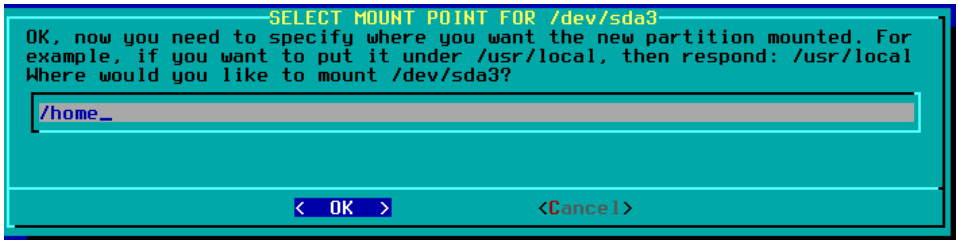


- Then, press “Select”.
- Do you want to format `/dev/sda3`?
  - I chose “Format with no bad block checking”:

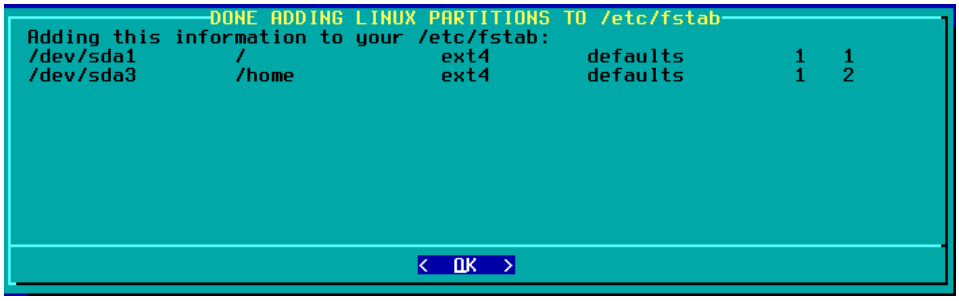


- Then, press “OK”.
- Select the file system that you want to use for the `/home` partition.
  - I chose “`ext4`”:

- Then, press “OK”.
- Select the mount point for `/dev/sda3`:
  - I typed “`/home`”:



- Then, press “OK”.
- A message will display that you are done adding Linux partitions to `/etc/fstab`:



- Press “OK” to continue to the next stage (discussed in Section 5).

4. If your computer supports UEFI

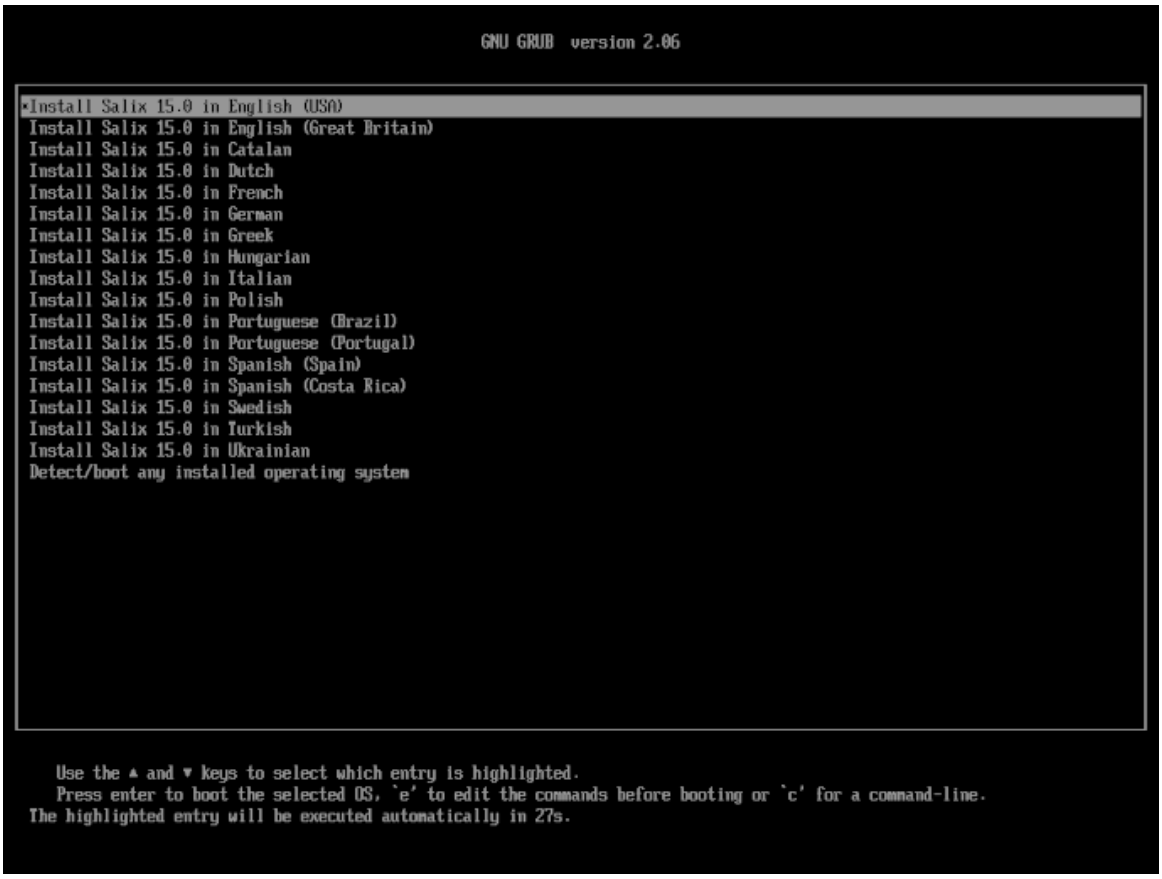
And you wish to install in UEFI mode, follow the instructions below.

If your computer does **not** support UEFI and you need to install in Legacy mode (BIOS/MBR setup), return to Section 3 above.

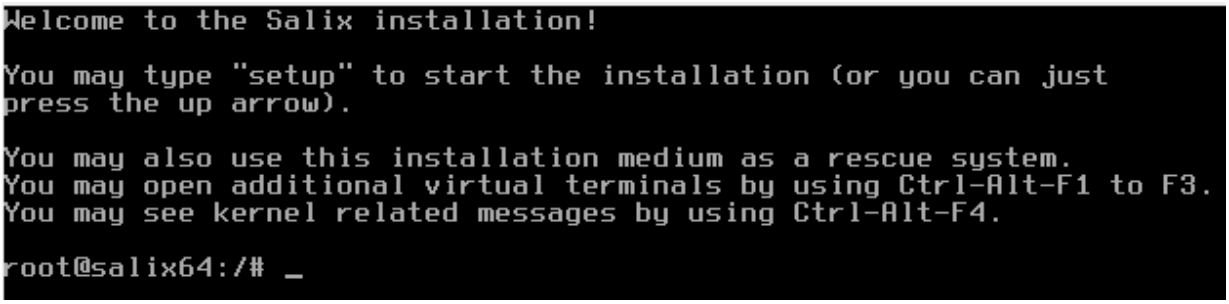
4.1. Preliminaries

You first select the language to be used during the installation process — not the language of the final, installed OS. (You will choose that in a later step. See Section 11 for more details.)

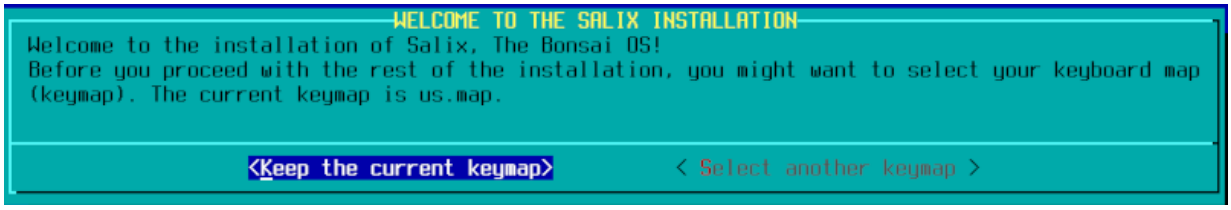
- I chose “Install Salix 15.0 in English (USA)”:



- At the command prompt, type “ setup “ to continue:



- “Keep the current keymap” [`us.map`]:



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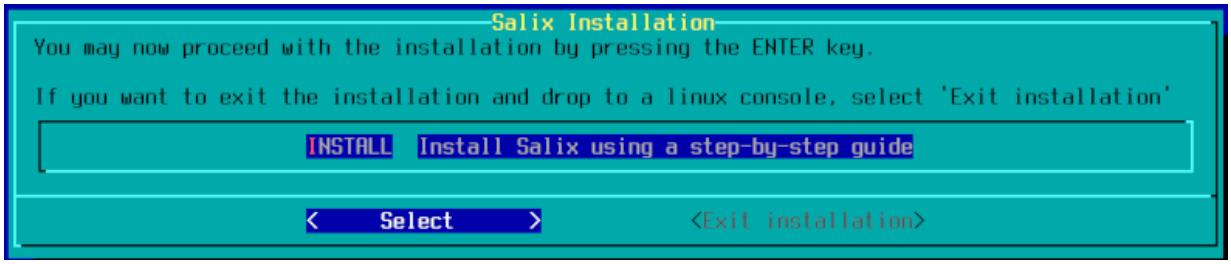

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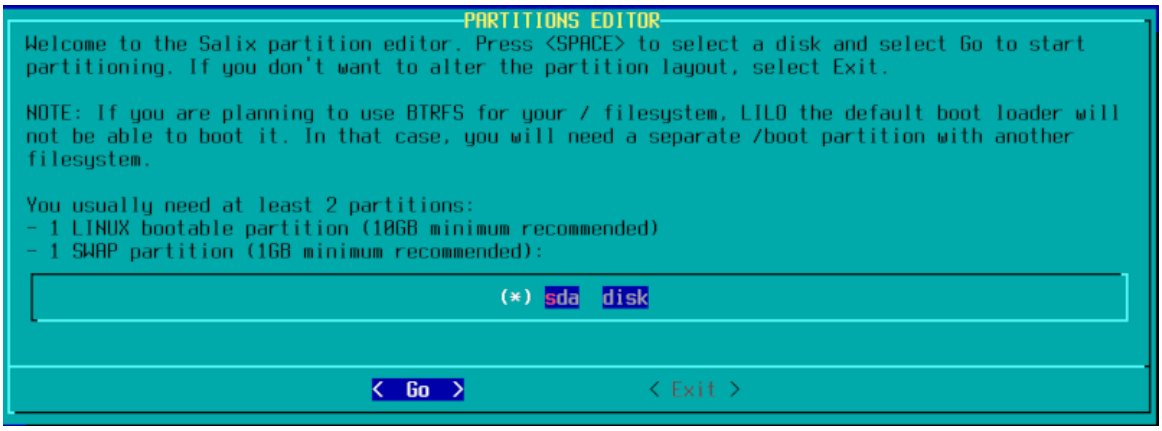
- Select: `( ) sda disk` (or the appropriate target disk for your computer):

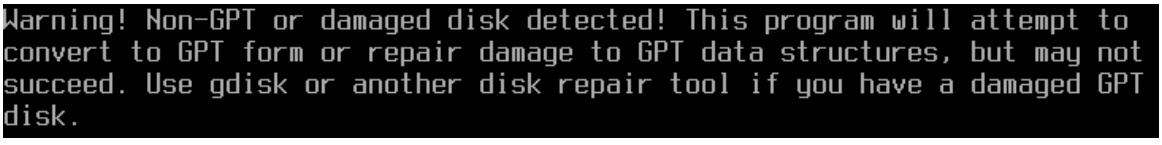
Tip: Use the Space bar to select a disk ; it should look like “ `(*)` “:



- Then, press: “Go”.
- This will invoke the `cgdisk` utility. `cgdisk` is a component of the GPT (GUID Partition Table) `fdisk` set of text-mode partitioning tools. It is specifically designed with support for GPT disks.

I will devote a bit more coverage to `cgdisk` because I was unfamiliar with the utility, and there are not as many online tutorials for it. For an overview of `cgdisk`, please read the article by Roderick W. Smith mentioned in Section 17.3.

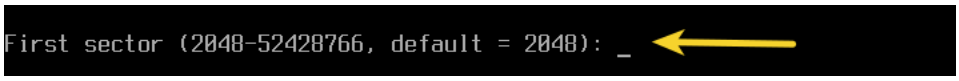
- If you see a Warning screen, don’t panic … This is normal/expected because at this point it may likely be a non-GPT disk:



- Press any key to continue.
- The `cgdisk` utility will now start.

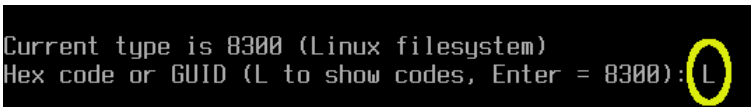
- Select the “New” option to begin creating a new partition.

Tip: At the “First sector” prompt line, just press Enter to accept the default value. (This confused me when I first experimented with `cgdisk`.)

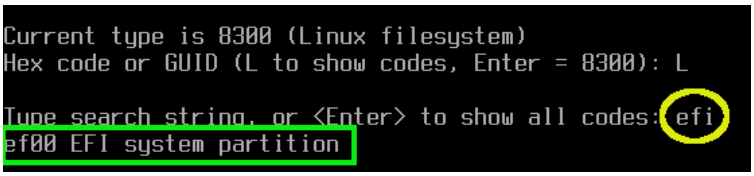


- On the “Size in sectors” line: “100MB” (or “500GB”) is acceptable syntax for indicating the size.

The first partition needs to be an ESP (EFI System Partition), so you need to change the current file type (`Linux filesystem`) to the file type required for ESP partitions (`efi`). Type “L” to show the codes for the filesystem types:



- Since there are (surprisingly) many filesystem types, you can filter the list by typing the search string “`efi`”. This will reduce the number of entries displayed:



- In this case, you want the partition hex code of “`ef00`”.
  - In the “Hex code” prompt line, type “`ef00`”
- Enter the new partition name: `/boot/efi`

The screenshot below shows creation of the root partition (15 GB) in progress:

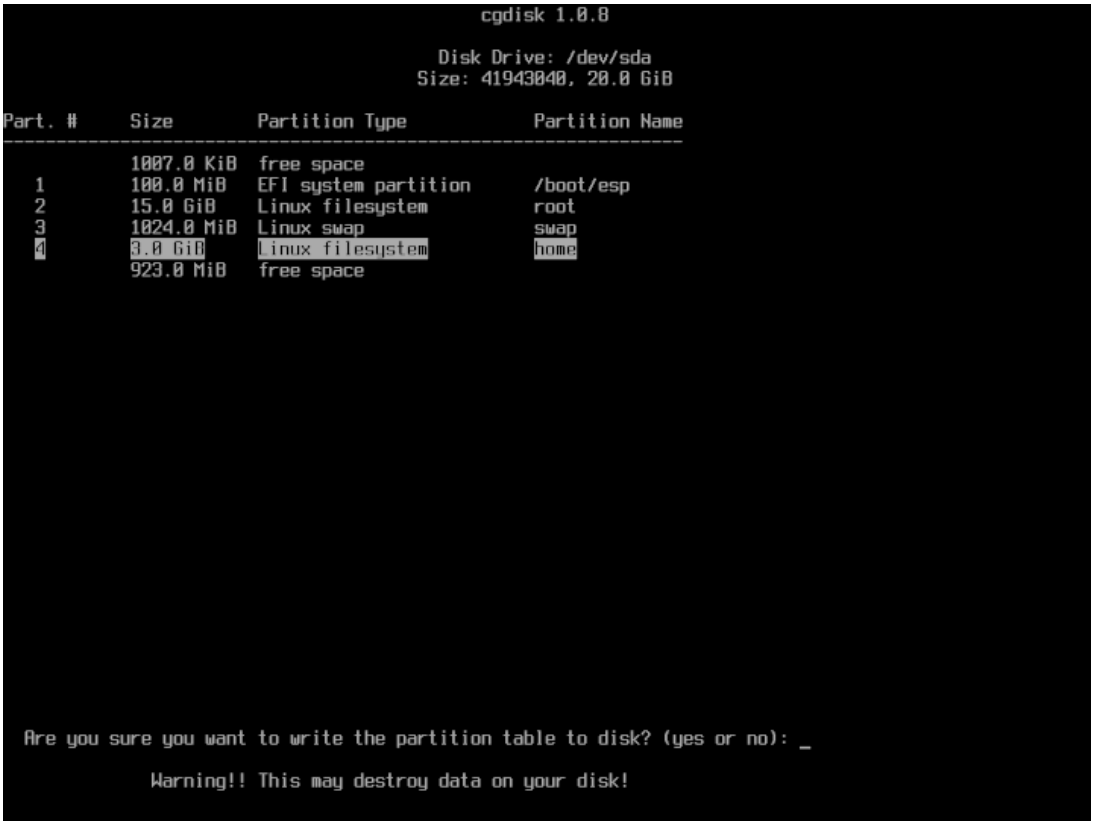
Tip: You will notice the small 1007 KiB free space area at the beginning of the disk; that exists because of partition alignment issues.

For root and the `/home` partition, the hex code is 8300 (`Linux filesystem`).

For the swap partition, the hex code is 8200 (`Linux swap`).

Below is the final arrangement of my virtual disk drive:

(Ideally, my EFI system partition [ESP] should be larger (300 - 500 MB in size), as should my swap and `/home` partitions. However, this layout was fine for my virtual test environment.)



Note: You will notice that `cgdisk` also creates a short gap at the end of the disk, so as to keep the final partition a multiple of the alignment length.

- Select "Write" to write these changes to your disk.
- "Are you sure you want to write the partition table to disk?" Answer: "yes"
- "The operation has completed successfully" message will appear at the bottom of the screen.
- Now, select "Quit".

> **Suggestion**: If you are uncomfortable with a command-line partitioning tool, an alternative approach is to use GParted in a Live environment to partition your disk beforehand. GParted can handle/manage both MBR disks and GPT disks, plus it has a friendlier GUI (in my opinion). GParted is available on the SalixLive64 Xfce ISO, GParted Live as well as on light-weight, portable distros such as Puppy Linux.

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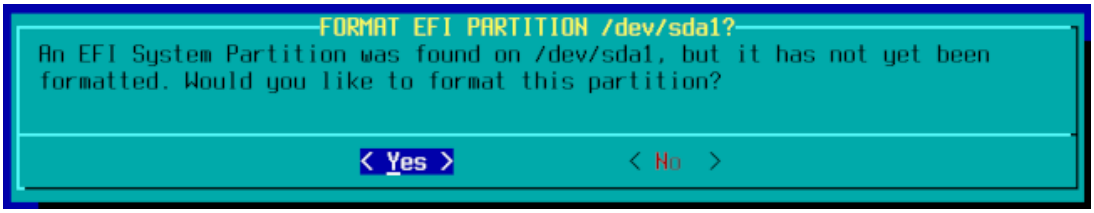
4.3. Format partitions / Assign mount points

The initial three steps below are identical to Section 3.3 above for the Legacy/MBR procedure. Please consult Section 3.3 to read those steps.

1. Swap space detected ... Configure and add it to `/etc/fstab`.
2. Select root partition and format it.
3. Select `/home` partition, format it and specify its mount point.

Note: There is a difference at the next stage because of the presence of the EFI system partition:

- "Format EFI partition?" Answer: "Yes"



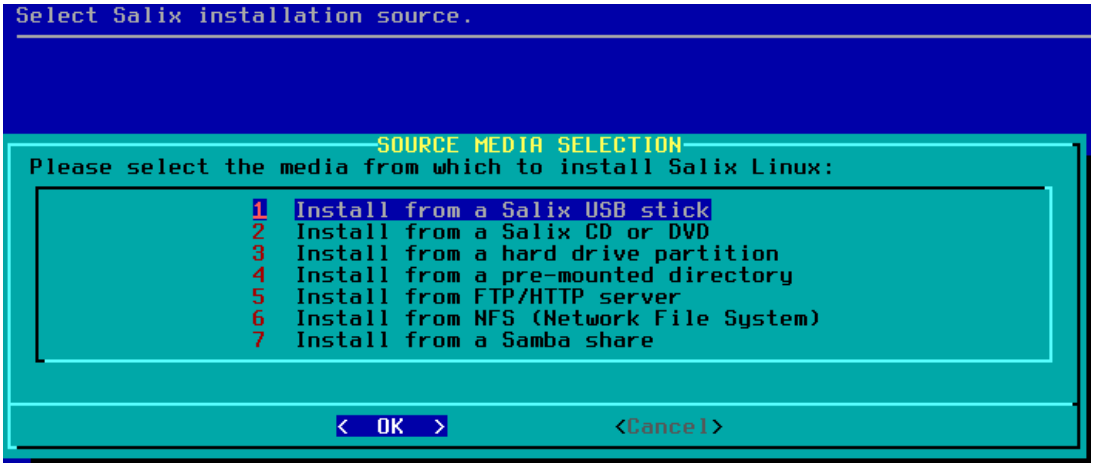
- The EFI partition should be recognized and added to `/etc/fstab`:

- Press "OK" to continue to the next stage of installation (discussed in Section 5 below).

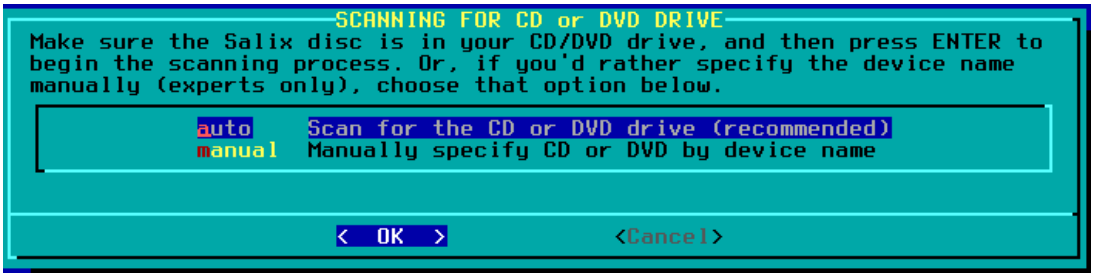
5. Select Salix installation source

- Choose the appropriate source for the installation medium that you are using.

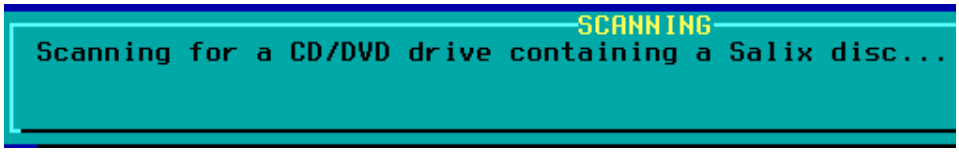
Tip: If you are installing within VirtualBox, choose option number "2".



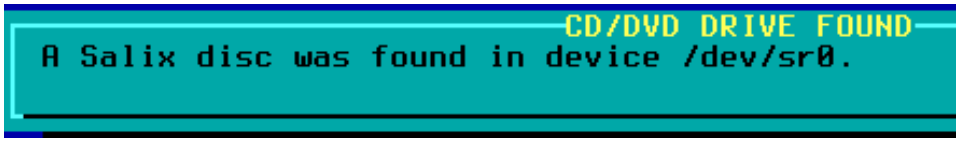
- Then, press "OK".
- I chose to have autoscan done and selected "OK":



- The installer begins scanning the system for the selected drive(s):



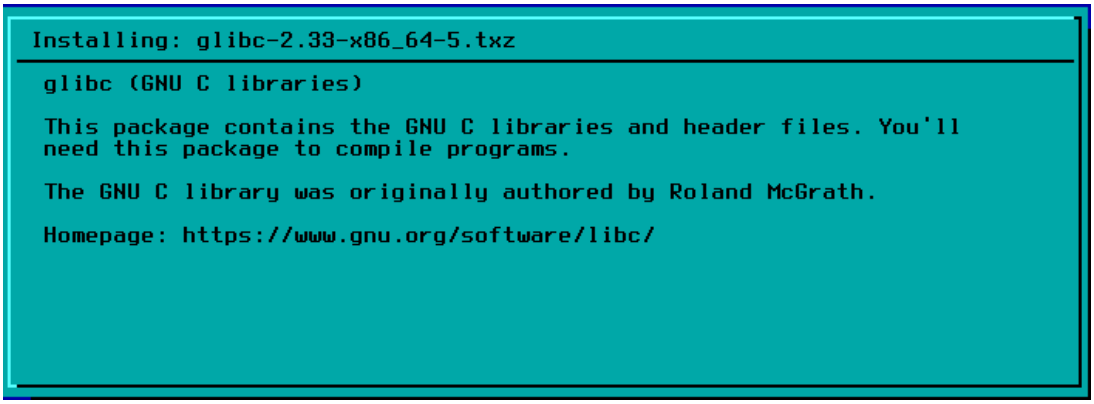
- In my virtual machine, the attached ISO was found:



6. Select installation mode

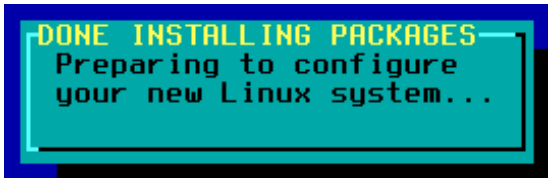
- I chose the option “Full – Install Everything”:

- Next, press “OK”.
- The installation will proceed. Individual screens with the package names/descriptions flash by as they are installed. This typically takes 5-6 minutes.



7. “Configuring your Linux system …”

- When package installation finishes, you will see the message “Preparing to configure your Linux system”:



- The `mkfontdir` and `mkfontscale` commands run:

- The Fontconfig library is updated:

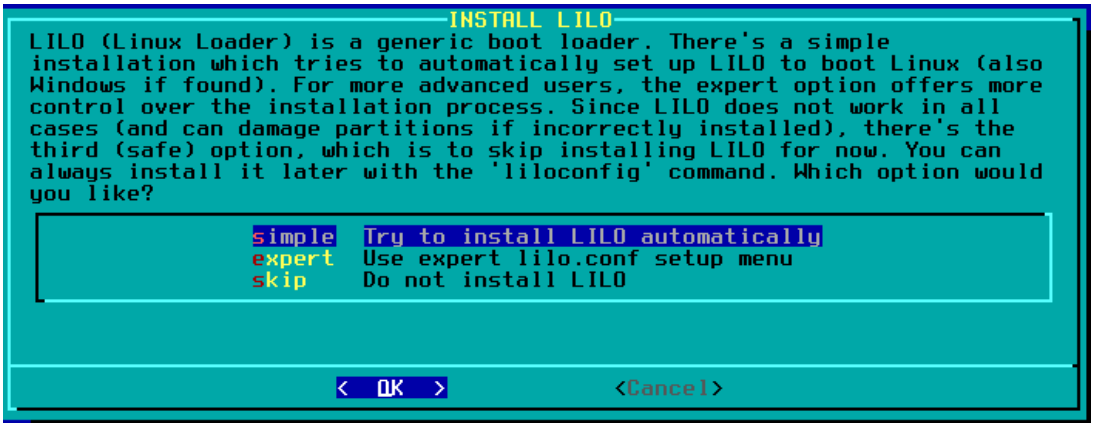
8. LILO installation

8.1. If your computer does not support UEFI

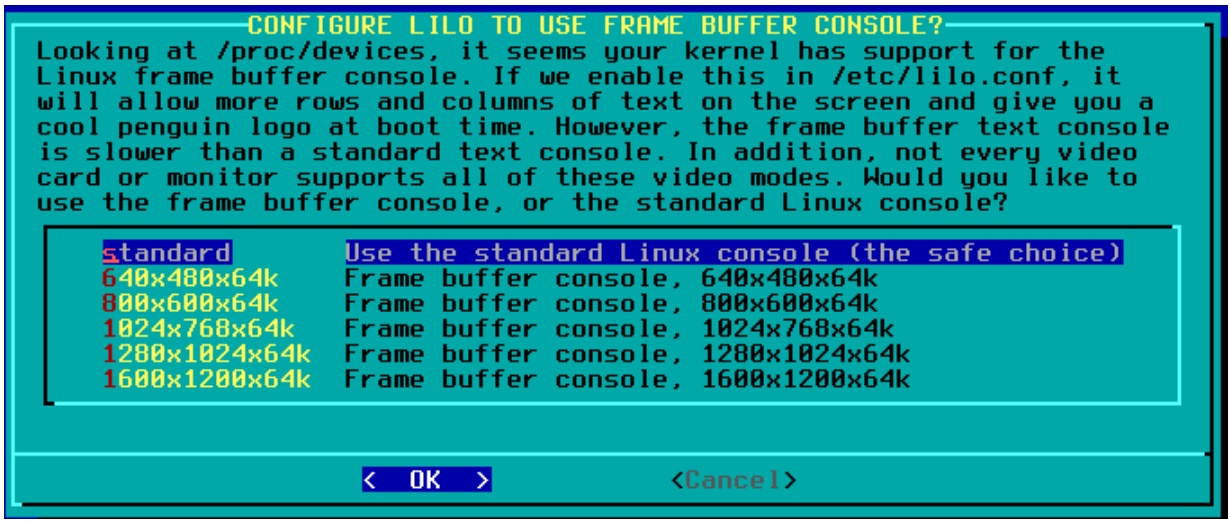
If you are installing in Legacy mode (BIOS / MBR setup), LILO will be used as the boot loader.

If your computer **supports UEFI** and you are installing in UEFI mode, jump to Section 8.2.

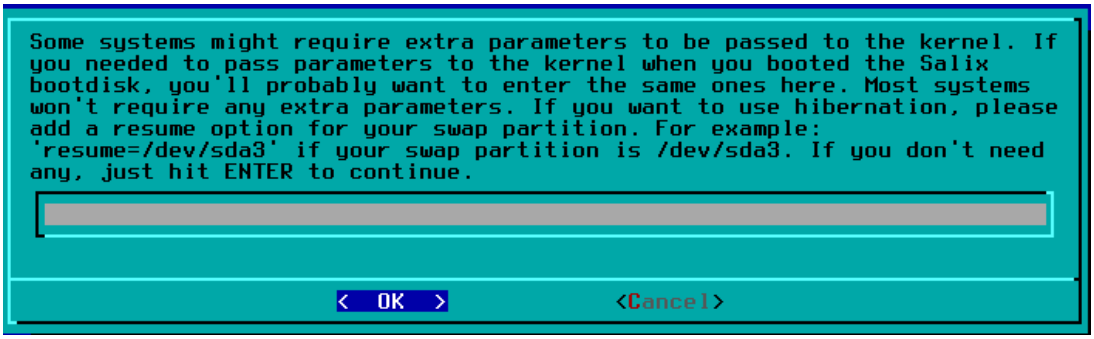
- At the “Install LILO” step, I chose “Simple – Try to install LILO automatically”:



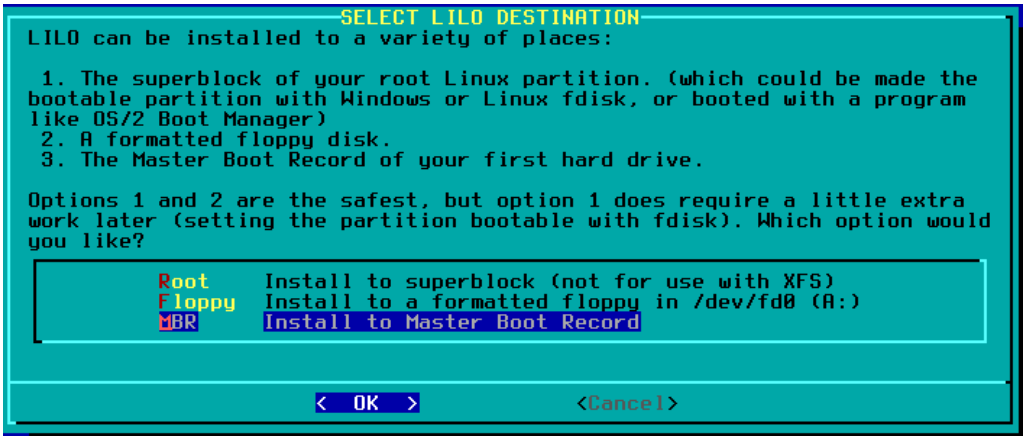
- Then, press “OK”.
- Configure LILO to use frame buffer console?
  - I chose “Standard – Use the standard Linux console (the safe choice)”:



- Then, press “OK”.
- I did not need to pass extra parameters to the kernel, so I left this dialog blank:



- Next, press “OK”.
- Select LILO Destination
  - I chose “MBR – Install to Master Boot Record”:



- Then, press “OK” to continue to the next stage (Section 9).

8.2. If your computer supports UEFI

And you are installing in UEFI mode, you will install ELILO instead of LILO.

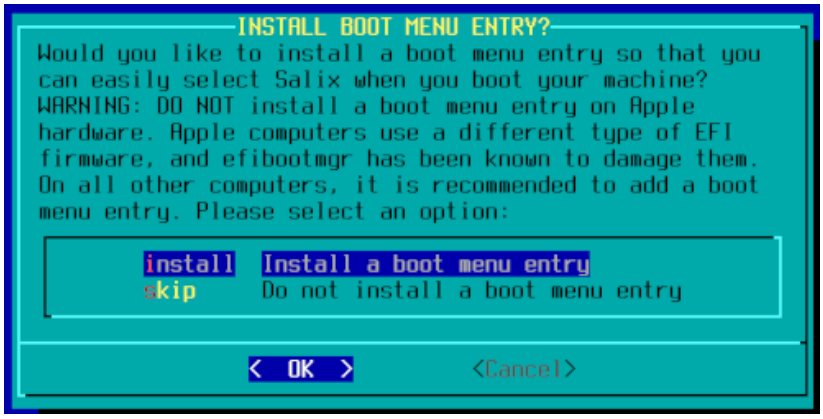
If your computer does **not** support UEFI and you are installing in Legacy mode (BIOS/MBR setup), return to Section 8.1 above.

The installer should detect that your system has UEFI firmware (with the message “UEFI firmware detected”).

- Skip installing LILO and proceed to ELILO installation. Answer: “OK” to the prompt:

- “Install boot menu entry?”

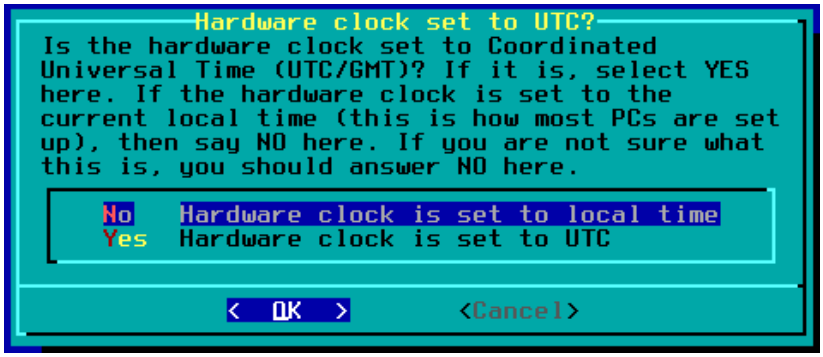
- Answer: “install”:



Note: The remaining steps below (in Section 9 and following sections) are identical regardless of whether you are doing a UEFI installation or a Legacy / MBR installation.

9. Set hardware clock

- Hardware clock set to UTC?
  - I chose “No – Hardware clock is set to local time”:

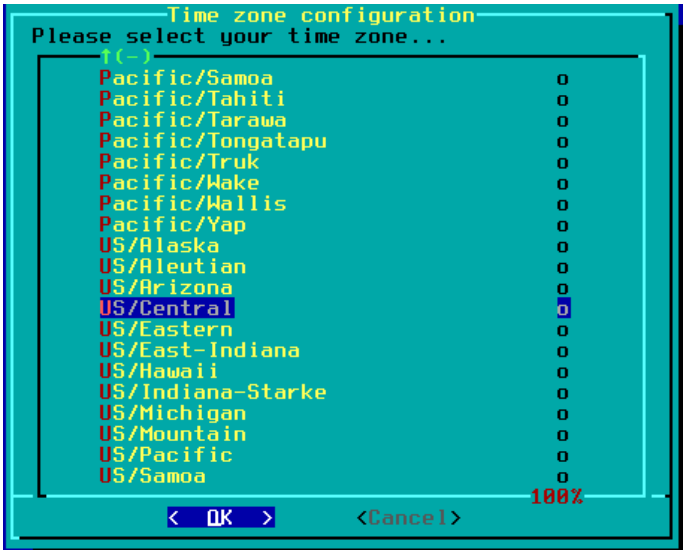


- Then, press “OK”.

10. Choose time zone

The next step is to configure the time zone.

- I am located in the Central time zone of the United States. For US residents, there are two separate alphabetic listings:
  - A list of some major cities appears under “America ...” for example, “America/New York”, “America/Chicago”, etc.
  - General time zones are listed under “US ...” such as “US/Central”, etc.

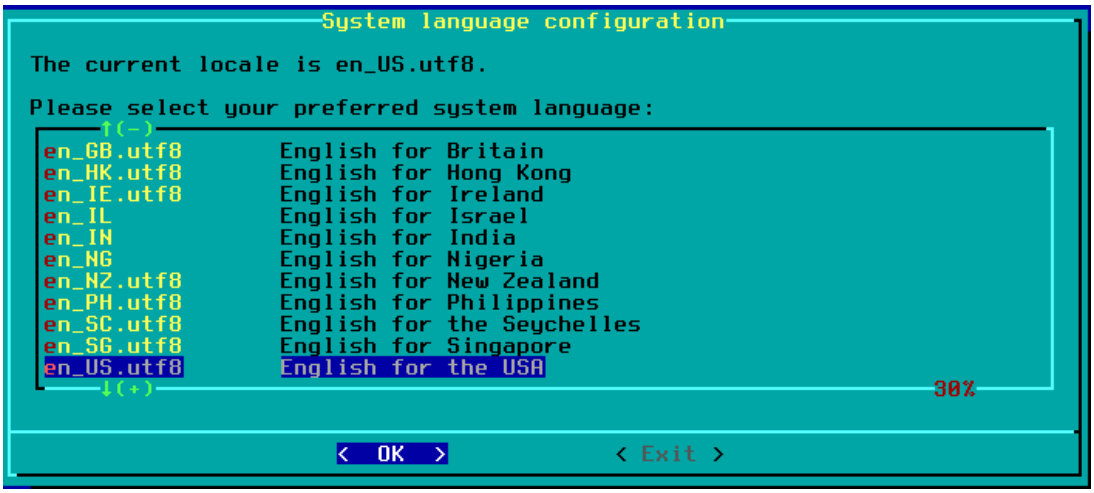


- Then, press “OK”.

11. System language configuration

This setting determines the language of the installed OS.

- I chose “en_US.utf8 – English for the USA”:



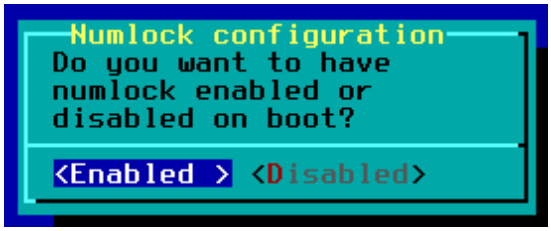
- Then, press “OK”.

12. NumLock configuration

The `Num Lock` (aka Numeric Lock or Number Lock) key replaces the functions of certain keys on the keyboard with a numeric keypad. It enables and disables the numeric keypad.

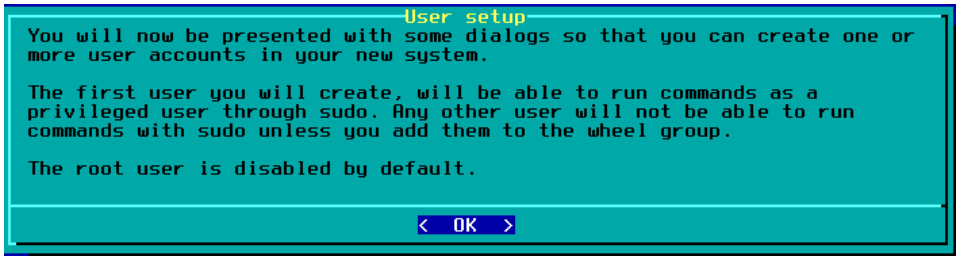
(This often-ignored feature can be helpful in several situations. For example, some people find it easier to type long sequences of numbers using a keypad, such as those found on calculators.)

- I chose “Enabled” (i.e., set to “On” when the computer boots up):



13. User setup

The first user created can run `sudo` commands. Any other user cannot unless you add them to the `wheel` group. The root user is disabled by default.



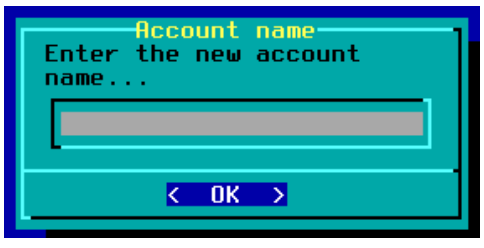
- Then, press “OK”.

(If you wish, the root user can be enabled after installation: https://docs.salixos.org/faq/enable-root/)

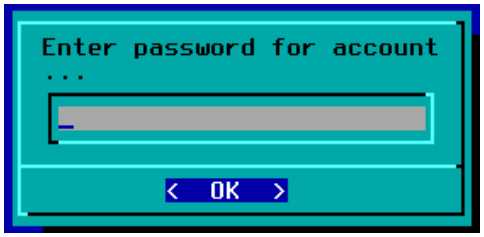
13.1. User accounts management

- Choose option number “1 – Create a new account”:

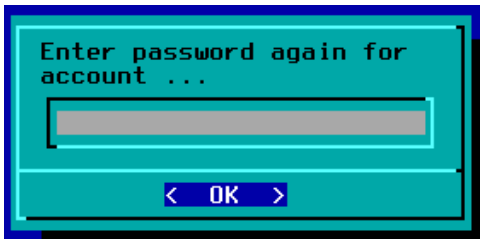
- Then, press “Select”.
- Enter new account name: I typed “david”:
  - Then, press “OK”:



- Enter your password for the newly created account:



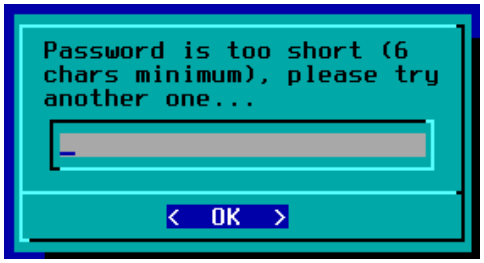
- Then, press “OK”.
- Enter the password again to confirm it:

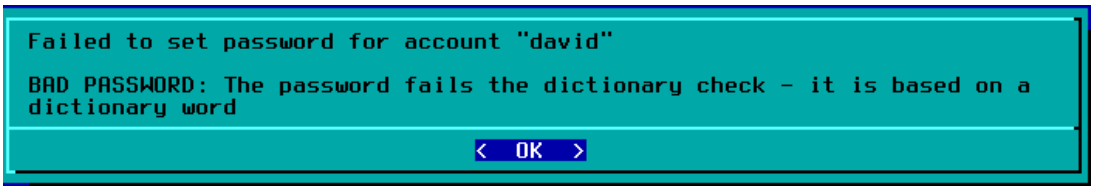


- Then, press “OK”.

> Tip: Be aware that password requirements are now enforced by PAM (Pluggable Authentication Modules). PAM implements strict password rules, including but not limited to length requirement, character composition and inactivity timeout.

Your password must have at least six characters and not be a “dictionary” word. Otherwise you will see the following error messages:

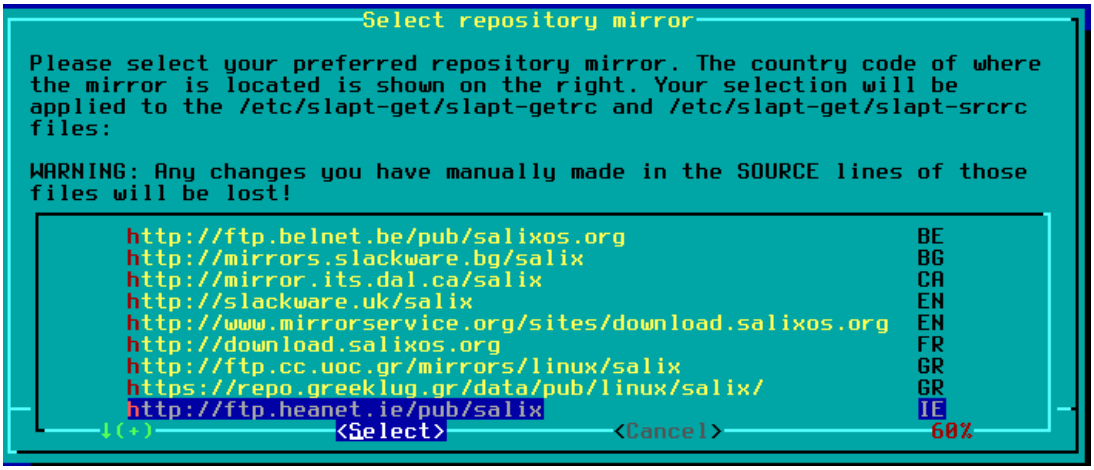




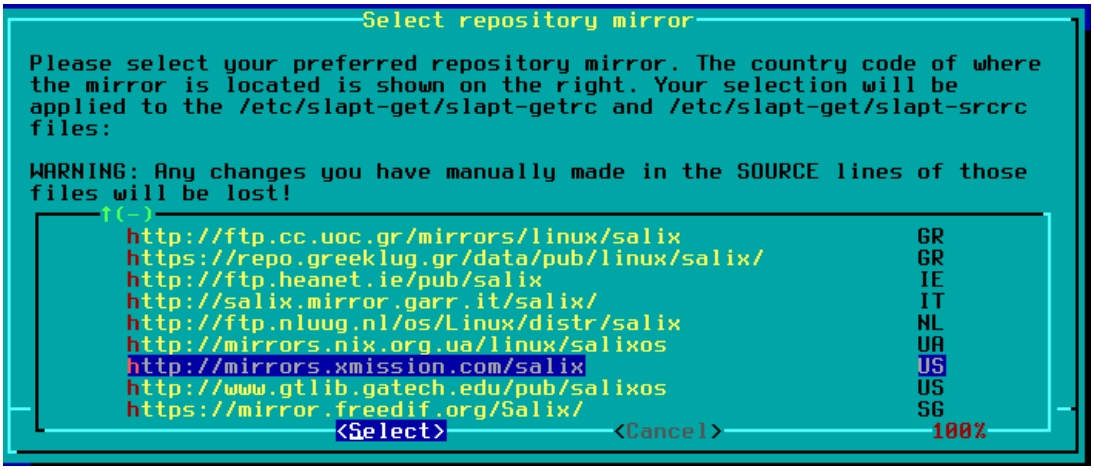
- After you complete this, the installer returns you to the Users Account Management screen:
- From here, I chose and pressed the “Exit user setup” option:

14. Select repository mirror

You are nearing the end of the installation; in this step, you will select a repository mirror.



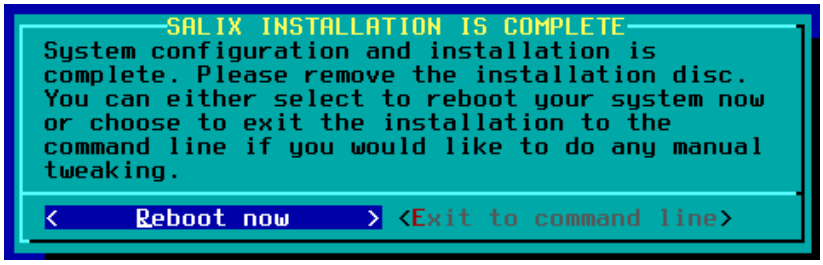
- I chose the US mirror at `mirrors.xmission.com` which has been very dependable, based on my experience:



- Then, press “Select”.

15. Installation complete

Salix installation is now complete:

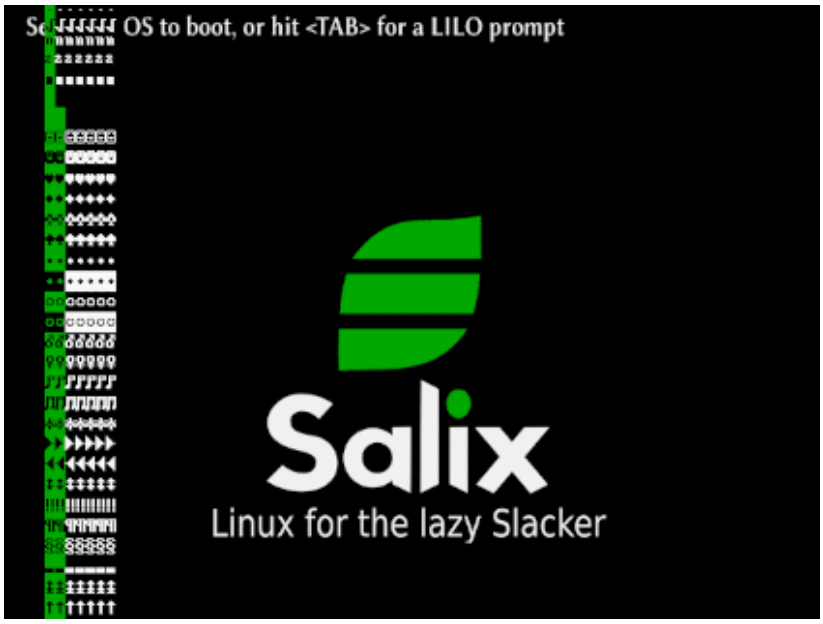


- Choose “Reboot now”.

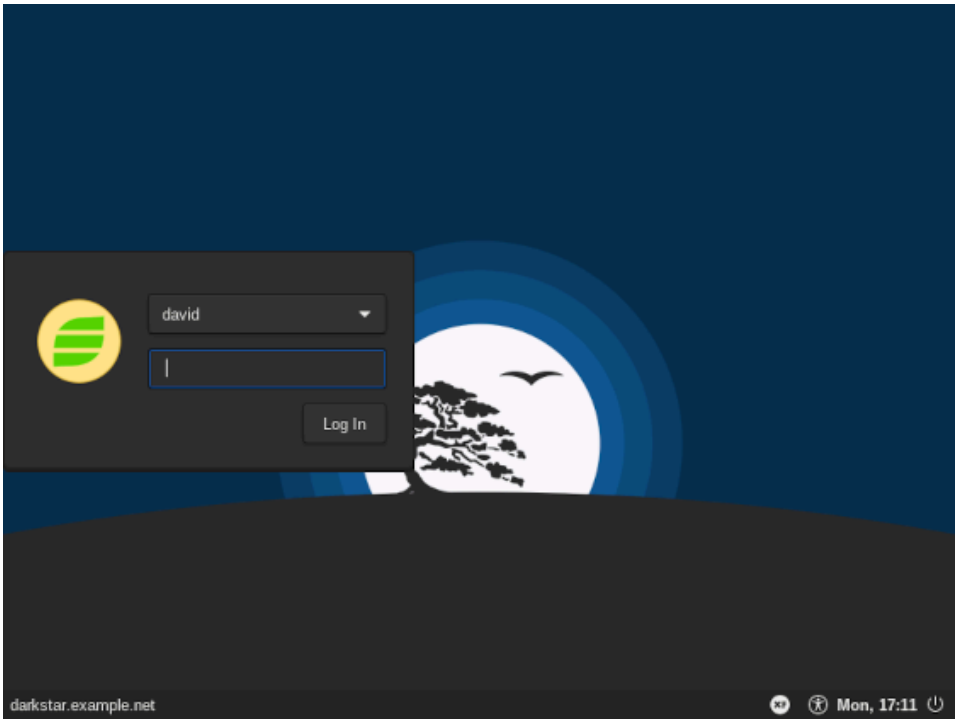
Note: The installer does **not** prompt you to safely remove the USB stick. You must quickly remove the stick before the PC reboots. (Otherwise it will reboot back into the installer.)

Congratulations! You have successfully installed Salix OS.

After rebooting, you should briefly see the Salix-themed LILO splash screen (apologies for the visual artifacts due to the virtual machine):

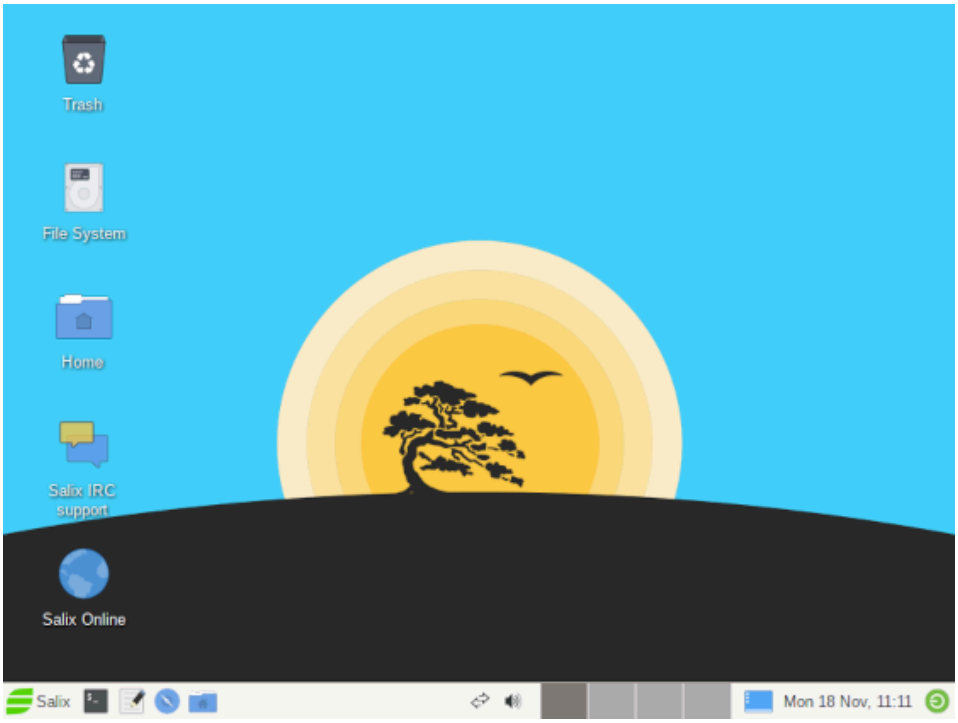


Next, you will be taken to the GDM login manager:

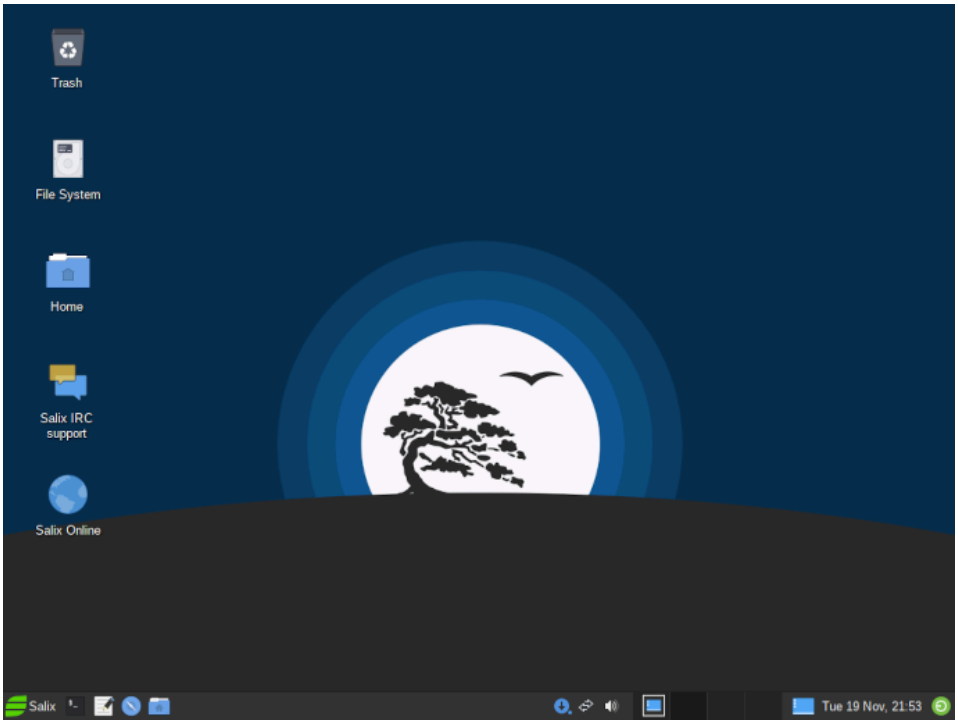


Finally, after logging in, you will see the default Salix 15.0 Xfce desktop:

The wallpaper is named "`salix_day`" and the icon set is Qogir with a light theme (although a dark theme is also available).



Below is a screenshot of the dark theme with the Qogir-dark icon set and the "`salix_night`" wallpaper:



16. What if you want GRUB instead of LILO?

Despite several attempts in virtual machines, I failed to install GRUB using this ISO (both with MBR and EFI). Although I am by no means an expert, I suspect the reason is that GRUB is not included on the Standard installer. (It is not listed in the `PACKAGELIST` file.)

If you wish to use GRUB as your boot loader, the easiest solution is to download the SalixLive64 Xfce ISO – which uses a completely different installer (SLI, the Salix Live Installer) – but comes with a GRUB install option.

If you are interested in trying to install GRUB via the Standard (non-live) ISO, you can peruse two threads in the Salix Forum:

https://forum.salixos.org/viewtopic.php?t=7089

`pnbalaji`. "[UPDATED - 09/27/2016] Install Grub2 in Salix" 27 Sept. 2016.

https://forum.salixos.org/viewtopic.php?t=2559

`globetrotterdk`. "How to Install Salix with GRUB2 instead of LILO." 3 Aug. 2011, updated in 2012.

17. Additional resources

17.1. Installation demos

If you would prefer to watch video demonstrations of the Salix installer, there are two in-depth ones available on YouTube:

https://www.youtube.com/watch?v=chO1IJcsMJU

OldTechBloke. "Salix OS [15.0]: A Powerful and Simple Slackware Distro." *YouTube*, 4 Oct. 2022. (39 min., 20 sec.)

OTB runs through a UEFI installation (in a virtual machine) from 4:38 until 12:14.

(*Note*: He bypasses partitioning with `cgdisk` by typing `# cfdisk` at the beginning of the installation, then uses `cfdisk` to partition the virtual disk. The `cfdisk` segment runs from 5:27 until 6:36.)

OldTechBloke (Steve Anelay) was kind, knowledgeable and produced excellent Slackware-related content. Sadly, he passed away from cancer on 24 Sept. 2023. R.I.P., OTB … you are missed.

https://www.youtube.com/watch?v=4DF4IMr96No

DistroTube. "Installation and First Look at Salix OS [15.0]." *YouTube*, 19 Sept. 2022. (27 min., 56 sec.)

Derek Taylor (`dt`) runs through a Legacy mode installation [BIOS/MBR] (in a virtual machine) from 0:36 until 11:55.

He uses `cfdisk` for the disk partitioning; that segment runs from 2:37 until 3:58.

17.2. On `cfdisk`

https://guide.salixos.org/225Partitionmanagementwithcfdisk.html

The web version of the Salix Startup Guide has a section on `cfdisk`.

https://www.makeuseof.com/how-to-create-resize-and-delete-linux-partitions-with-cfdisk/

Sharma, Deepesh. "How to Create, Resize and Delete Linux Partitions with `cfdisk`." *MakeUseOf.com*, 22 Feb. 2021.

17.3. On `cgdisk`

https://www.rodsbooks.com/gdisk/cgdisk-walkthrough.html

Smith, Roderick W. "A `cgdisk` Walkthrough." *rodbooks.com*, 18 Apr. 2022.

`cgdisk` is a component of the suite of text-mode partitioning tools (GPT fdisk) created by Rod Smith. It is essentially just `cfdisk` with support for GPT (Globally Unique Identifier Partition Table).

17.4. Guidelines on swap partition size

https://itsfoss.com/swap-size/

Prakash, Abhishek. "How Much Swap Should You Use in Linux?" *It's FOSS*, 1 Jun. 2023.

Good luck and Enjoy using Salix!