

Getting Started with GNOME Desktop

Basic information and instructions

WHAT?

GNOME is a user-friendly graphical desktop environment for SUSE Linux Enterprise Server for SAP applications. This guide details its default setup, customization and common operations.

WHY?

This document introduces SUSE Linux Enterprise Server for SAP applications users to GNOME Desktop, covering its basic settings and daily use.

EFFORT

It takes approximately 25 minutes to read and understand this guide.

GOAL

Gain a foundational understanding of GNOME Desktop's capabilities and learn how to tailor it to your specific needs and preferences.

REQUIREMENTS

- Desktop Applications module installed on your SUSE Linux Enterprise Server for SAP applications system

Publication Date: 07 Nov 2025

Contents

- 1 Introduction to GNOME Desktop 3

2	Logging in and managing your GNOME Desktop session	3
3	Visual overview of GNOME Desktop	6
4	Working with GNOME Desktop	7
5	Customizing the settings for GNOME Desktop	14
6	For more information	24
7	Legal Notice	24
A	GNU Free Documentation License	25

1 Introduction to GNOME Desktop

SUSE Linux Enterprise Server for SAP applications includes GNOME Desktop, a desktop environment with an easy-to-use graphical interface. This article describes the default configuration of GNOME Desktop. If you or your system administrator modify the defaults, certain aspects might be different, such as appearance or key combinations.

1.1 What is GNOME Desktop?

GNOME Desktop is a streamlined, minimal graphical environment built on GNOME and optimized for enterprise use. It includes essential desktop components such as a terminal, text editor, file and Web browser, and basic multimedia and document viewers.

GNOME Desktop runs on Wayland by default, with xwayland support for legacy X11 applications. It offers infrastructure for accessibility, multilingual input and remote access using RDP. Additional GNOME applications are excluded unless explicitly required, ensuring a lightweight and secure experience.

1.2 Benefits of GNOME Desktop

GNOME Desktop is a free, open source and easy-to-use desktop environment offering a variety of core applications to help you organize and complete your daily tasks. With built-in support for accessibility, multilingual input and remote access via RDP, GNOME Desktop is well-suited for enterprise environments.

2 Logging in and managing your GNOME Desktop session

Learn how to log in to GNOME Desktop, and how to pause or finish the session.

2.1 Starting a session

When starting your SUSE Linux Enterprise Server for SAP applications system, you first see a login screen. All users must authenticate before starting a session. This step helps protect your personal information and data from unauthorized access.

1. In the login screen, select your user name.
If your user name is not listed, click *Not listed?*. Then enter your user name and click *Next*.
2. Enter your password and confirm with **Enter** .



Note: Enabling Automatic Login

If the computer is used by a single person, you can enable Automatic Login for this user at system start. This saves time, but also impacts account security. Automatic Login can be enabled or disabled during installation. You can also configure it in *Settings > Users*: select the account and switch on *Automatic Login*. For security reasons, Automatic Login is not recommended.

2.2 Pausing or finishing your session

To pause or end your session, open the *System* menu in the upper-right corner of the top bar. Click the *Power Off* button and choose one of the options listed.

- **Suspend.** Pauses your session and puts the computer into a low-power mode. Suspend mode can be configured to lock your screen, so nobody can look at or change your work. Waking up the computer is generally much quicker than a full computer start.
This mode is also known as suspend-to-RAM, sleep or standby mode.
- **Restart.** Ends the current session and restarts the computer. Restarting is necessary to apply system updates.
- **Power Off.** Ends the current session and turns off the computer.
- **Log Out.** Ends the current session and returns to the login screen. This allows you (or another user) to log in again.
- **Switch User.** Keeps your current session active in the background while allowing another user to log in. You can return to your session later.

2.3 Locking the screen

1. To lock the screen, open the *System* menu in the upper-right corner of the top bar and click the padlock icon.

When you lock your screen, a curtain with a clock appears first. After a while, the screen turns black.

2. To unlock the screen, move the mouse or press a key to display the locked screen dialog. Enter your password and press **Enter**.

2.4 Logging out or switching users



Note: Option only available on multi-user system

The *Switch User* option only appears in the menu if you have more than one user account on your system.

1. Open the *System* menu and click the *Power Off* button.
2. Select one of the following options:

Log Out

Logs you out of the current session and returns to the login screen.

Switch User

Suspends your session so another user can log in.

2.5 Restarting or shutting down the computer

1. Open the *System* menu and click the *Power Off* button.
2. Select one of the following options:

Suspend

Pauses your session and puts the system into a low-power mode. Suspend mode can be configured to lock your screen, so nobody can look at or change your work. Waking up the computer is generally much quicker than a full computer start.

Restart

Logs you out of the current session, then restarts the system.

Power Off

Logs you out of the current session, then shuts down the system.

3 Visual overview of GNOME Desktop

Learn how to use the *Activities* overview, the *Clock* and *Calendar* features and the *System* menu.

3.1 *Activities* overview

The *Activities* overview shows a preview of all open windows and icons for favorite and running applications. It also integrates searching and browsing functionality.

OPENING THE *ACTIVITIES* OVERVIEW

To open the *Activities* overview, you have the following options:

- In the left corner of the top bar, click the *Activities* button.
- Move your mouse pointer to the upper-left hot corner.
- Press the **Meta** key on your keyboard.

FEATURES OF THE *ACTIVITIES* OVERVIEW

Search box

Use the search box at the top to find applications, settings and files in your home directory.

To search, you do not need to click the search box. Begin typing directly after opening the *Activities* overview. Search starts while you type, you do not need to press **Enter**.

dash

The dash is the bar positioned in the center at the bottom. It contains your favorite applications and running applications. If you move the mouse pointer over one of the icons, the name of the corresponding application is displayed nearby. A small dot underneath the icon indicates that the application is running.

Right-clicking an icon opens a menu which offers different actions depending on the associated program. Using *Pin to Dash*, you can place the application icon permanently in dash. To remove a program icon from dash, select *Unpin*. To rearrange an icon, use the mouse to drag it to a new position.

3.2 *Clock and Calendar*

Click the clock icon on the top bar to see the current day of the week and time. If you are using the *Calendar* itself or any other calendar application that is supported by *Calendar*, it also shows your upcoming appointments and notifications.

3.3 *System menu*

To open the *System* menu, click the icons in the top-right corner of the screen. From here, you can adjust volume and brightness, manage network and power settings, take a screenshot, lock the screen, switch users, log out or shut down the system.

4 Working with GNOME Desktop

Learn how to manage files, access removable media and use assistive technologies in GNOME Desktop.

4.1 *Managing files and directories*

The GNOME Files application provides a graphical interface for managing local and remote files. To launch it, press **Meta**, search for files and select *Files* from the hit list.

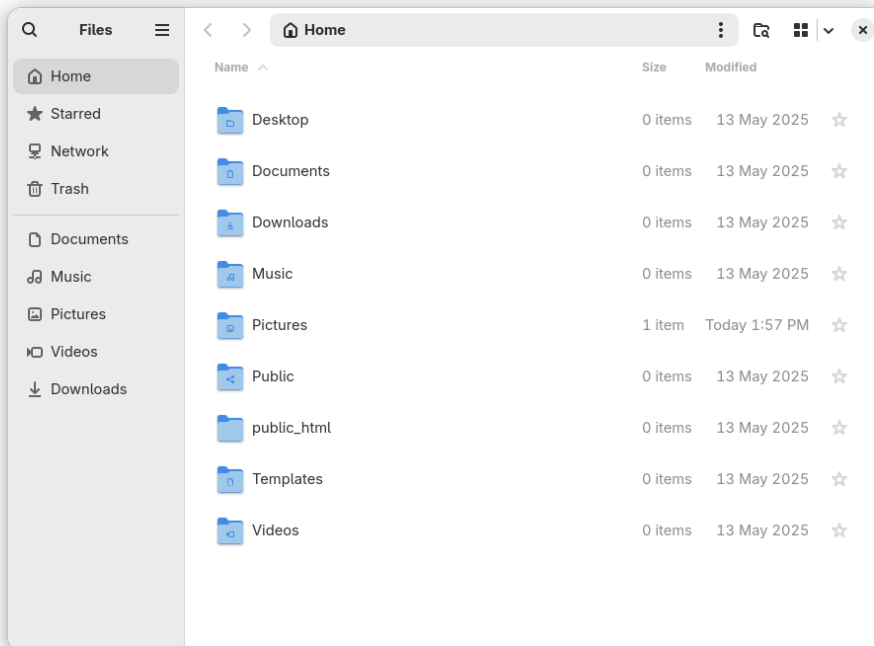


FIGURE 1: **GNOME FILE MANAGER**

The main interface elements include the following:

Toolbar

Includes back/forward navigation, a path bar with search function, view options (list or grid), sort controls and a three-dot menu for actions and settings specific to the current folder.

Sidebar

Provides quick access to frequently used folders and network locations. Toggle the sidebar with **F9**.

Main menu

The three-line icon at the top of the sidebar provides options like opening preferences, adjusting icon size, creating folders, or opening new windows and tabs.

Content area

Displays files and folders in the selected view. Use the toolbar's view menu (top right) to toggle between grid and list layouts.





Context menus

Right-click items or empty space to open a menu. Options depend on where you click—on a file or folder, or on the background.

4.1.1 Useful key combinations

The following table lists a selection of key combinations of GNOME Files.

TABLE 1: GNOME FILES KEY COMBINATIONS

Key Combination	Action
Alt +  / Alt + 	Navigate backward/go forward.
Alt + 	Open parent directory.
Alt +  or Enter	Open selected item.
Ctrl + L	Switch path bar from a button view to an editable text box. The editable path bar supports the URI schema and can be used to connect to remote servers via FTP, SFTP, SSH, SMB and other protocols. For example, use <code>ftp://tux@ftp.example.tld</code> to connect to an FTP server <code>ftp.example.tld</code> with the user name <code>tux</code> .
/	Jump to root directory.
Alt + Home	Open home directory.
Del	Move selected item to trash.

4.1.2 Administrative file tasks

Compressing files or directories

Right-click a directory, select *Compress*, choose an archive format (.zip, .tar.xz or .7z), then specify a destination.

Bookmarking locations

Navigate to the folder you wish to bookmark, or locate a specific file within GNOME Files and click the star icon to the right of its name in the file manager's list or grid view. Bookmarked items will then be listed in the *Starred* section of the sidebar for easy access.

Items in the sidebar, including those in the *Starred* section, can be renamed or reordered.

4.2 Accessing removable media

To access devices like USB flash drives or CDs and DVDs, insert or attach the medium. An icon for the medium is automatically created on the desktop. For many types of removable media, a GNOME Files window pops up automatically. If GNOME Files does not open, double-click the icon for that drive on the desktop to view the contents. In GNOME Files, an item for the medium appears in the sidebar.



Warning: Unmount to prevent data loss

Do not physically remove devices immediately after using them. Even when the system does not indicate that data is being written, the drive may not be finished with a previous operation.

To safely remove a device:

1. From the *Activities* overview, open *Files*.
2. Locate the device in the sidebar and click the *Eject* icon.
Now you can safely remove the device.

4.3 Assistive technologies

The GNOME Desktop provides built-in assistive technologies to support users with disabilities and facilitate interaction with common assistive devices. This chapter describes several assistive technology applications designed for users with physical disabilities like low vision or impaired motor skills.

4.3.1 Enabling assistive technologies

To configure accessibility features, open the *Settings* dialog by right-clicking the desktop and choosing *Settings*. In the navigation pane, select *Accessibility*. Each assistive feature can be enabled separately.

If you need a more direct access to individual assistive features, turn on *Always Show Accessibility Menu*. This will display an icon resembling a person in the top bar, providing quick access to accessibility settings.

4.3.2 Visual assistance

In the *Seeing* section of the *Accessibility* settings, you can enable features that help people with impaired vision.

- If the *Screen Reader* is turned on, the screen reader reads displayed text as you move the focus.
- Turning on *High Contrast* increases the color contrast of foreground and background interface elements.
- Turning on *On/Off Shapes* uses shapes to indicate state in addition to or instead of using color.
- Turning on *Animation Effects* enables visual animations throughout the user interface. Disabling this can help reduce visual distraction.
- Turning on *Large Text* increases the size of all text in the user interface.
- You can change the *Cursor Size* to improve pointer visibility.
- If *Sound Keys* are turned on, the system will play a sound when **Num Lock** or **Caps Lock** is toggled.
- Enabling *Always Show Scrollbars* keeps scrollbars visible at all times, which can help users who have difficulty locating them.

4.3.3 Hearing assistance

In the *Hearing* section of the *Accessibility* dialog, you can enable features helping people with impaired hearing.

Turning on *Overamplification* allows the system volume to exceed 100%, which can help users with hearing loss. Note that this may reduce sound quality.

If *Visual Alerts* are turned on, a visual indication is shown when an alert sound occurs. You can choose to flash either the window title or the entire screen. Use *Test Flash* to preview the effect.

4.3.4 Typing assistance

In the *Typing* section of the *Accessibility* dialog, you can enable and configure features that help people with mobility impairments.

- *Screen Keyboard* allows you to use the on-screen keyboard to type in input fields.
When enabled, an on-screen keyboard appears at the bottom of the screen when you next have the opportunity to type.

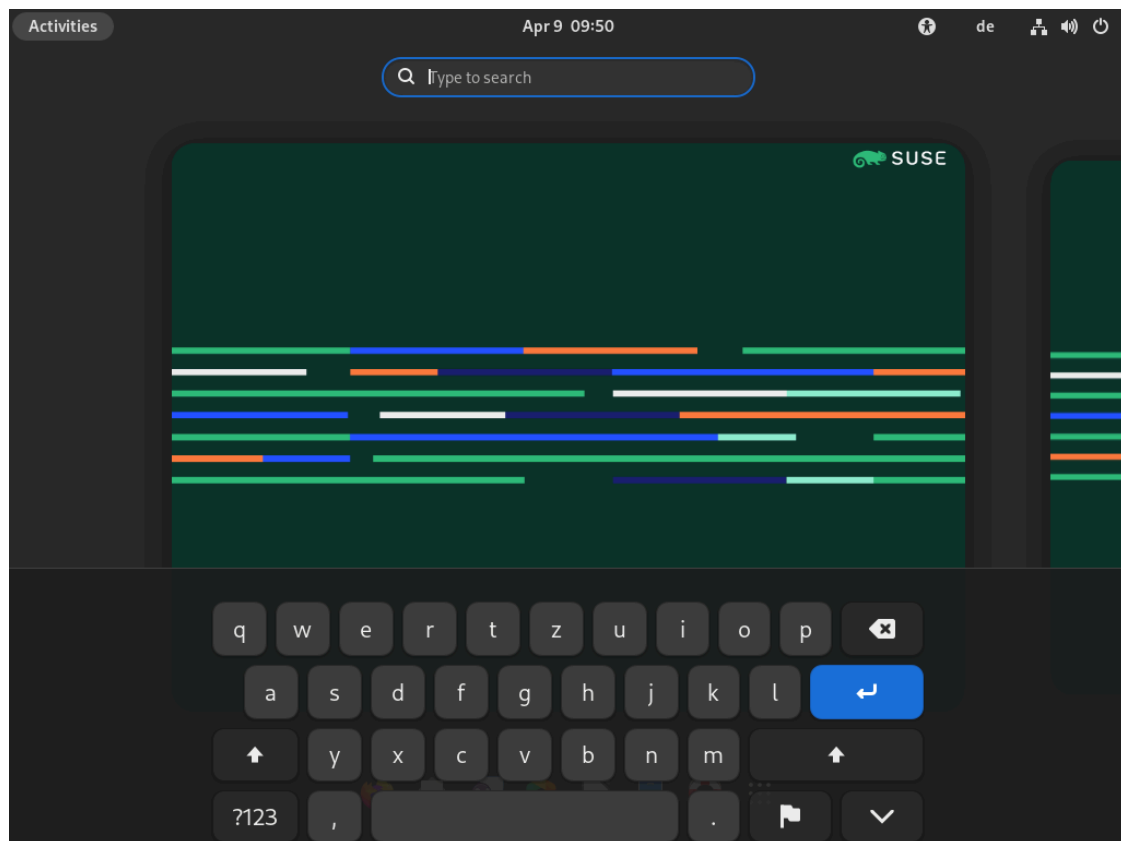


FIGURE 2: ON-SCREEN KEYBOARD

- To enter numbers and symbols, press the *?123* button first. More symbols are available if you press the *=/<* button. To return to the alphabetic keyboard, press the *ABC* button.
- To temporarily hide the keyboard, press the button with the arrow down icon. The keyboard is shown again automatically in the next situation where you can use it. To change your keyboard layout or change *Region & Language* settings, press the button with the flag icon.
- *Enable by Keyboard* allows you to turn accessibility features on or off using the keyboard.
- **Text Cursor**
 - *Cursor Blinking* controls if the cursor blinks in text fields.
 - *Blink Speed* lets you adjust the speed at which the cursor blinks, from *Slow* to *Fast*.
- **Typing Assist**

- *Repeat Keys* makes key presses repeat when the key is held down.
- *Sticky Keys* allows you to type key combinations one key at a time rather than having to hold down all keys at once. When this feature is turned on, sequences of modifier keys act as a key combination. For example, the **Alt** **→** shortcut switches between windows. With sticky keys turned off, you need to hold down both keys at the same time. With sticky keys turned on, press **Alt** and then **→** to do the same.
- *Slow Keys* introduces a delay between when a key is pressed and when it is accepted. This means that you need to hold down each key you want to type for a little while before it appears. Use slow keys if you accidentally press several keys at a time when you type, or if you find it difficult to press the right key on the keyboard first time.
- *Bounce Keys* allows you to ignore key presses that are rapidly repeated. This feature can help, for example, if you have hand tremors which cause you to press a key multiple times when you only want to press it once.

4.3.5 Pointing and Clicking

In the *Pointing and Clicking* section of the *Accessibility* settings, you can enable and configure features that help people with mobility impairments related to using a mouse or other pointing devices.

- *Mouse Keys* allows you to use the numeric keypad to move your mouse pointer.
- *Locate Pointer* helps you reveal the pointer location by pressing the Left **Ctrl** key.
- *Activate Windows on Hover* allows you to place the pointer over a window to activate it.
- *Double-Click Delay* lets you adjust the time allowed between clicks for them to be recognized as a double-click.
- **Click Assist**
 - *Simulated Secondary Click* enables a secondary click (usually equivalent to a right mouse button click) to be performed by holding down the primary mouse button. This is useful if you find it difficult to move your fingers individually on one hand, or if your pointing device only has a single button.
 - *Hover Click* allows you to trigger a click by hovering the mouse pointer over an item on the screen. This is useful if you find it difficult to move the mouse and click at the same time.

If this feature is turned on, a small hover click window may open and stay above all your other windows, allowing you to choose what type of click should happen when you hover. When you hover your mouse pointer over a button and do not move it, the pointer gradually changes color. When it has fully changed color, the button is clicked.

4.3.6 Zoom

In the *Zoom* section of the *Accessibility* settings, you can enable features that help people with visual impairments.

- *Desktop Zoom* allows you to magnify the entire screen.
- *Magnifier* section offers detailed configuration options, including *Magnifier View*, *Screen Area* and *Follow Behavior*.
- The *Crosshairs* section includes options like *Overlap Mouse Cursor*, *Thickness* and *Length* sliders, and *Color*.
- *Color Filters* offers the *Inverted* option to invert colors in the magnifier region, and *Brightness*, *Contrast* and *Color* options to adjust color effects.

5 Customizing the settings for GNOME Desktop

Learn how to customize the settings for GNOME Desktop, like changing the background or configuring language and keyboard settings to suit your personal taste and needs.

5.1 Configuring the desktop background

The desktop background is the image or color that is applied to your desktop. You can also customize the image shown when the screen is locked.

To change the desktop background:

1. Right-click the desktop and choose *Change Background*.

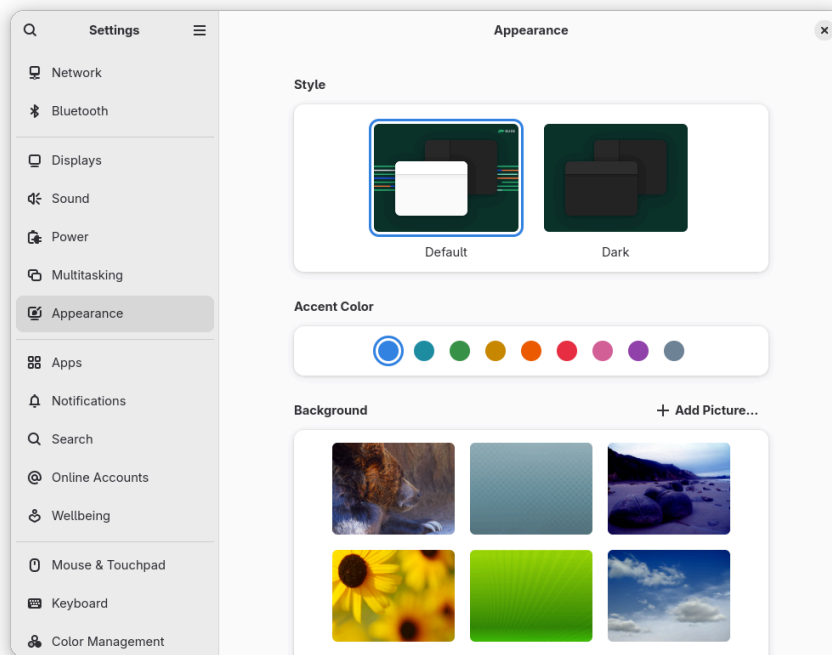


FIGURE 3: GNOME BACKGROUND SETTINGS

2. Select one of the wallpapers (preconfigured images distributed with your system) shown in the content area.
3. Alternatively, click *Add Picture* to select an image from your Pictures directory (~/Pictures) or another location in your file system.
4. Close the *Settings* dialog.

The new background is now shown on your desktop.

5.2 Configuring language settings

SUSE Linux Enterprise Server for SAP applications can be configured to use any of several languages. The language setting determines the language of dialogs and menus and can also determine the keyboard and clock layout.

To configure your language settings, right-click the desktop and choose *Settings* > *System* > *Region & Language*.

Here you can choose:

- *Language*. Choose a language from the list. For the change to take effect, you are prompted to *Restart* the desktop session. To do so, you must log out of your session and log back in afterward.
- *Formats*. To change the formats for date, number, currency and related options, choose a country from the list. For the change to take effect, you must log out of your session and log back in afterward.

5.3 Configuring the keyboard

Refer to [Section 4.3, “Assistive technologies”](#) for additional settings, such as key auto-repetition and cursor blink rate, and accessibility features. To configure your keyboard layout, refer to [Section 4.3.4, “Typing assistance”](#).




Note: Settings made using **ibus-setup** do not take effect

On GNOME, settings made using **ibus-setup** do not take effect. **ibus-setup** can only be used to configure IceWM. Instead, always use the *Settings* application:

- To change input methods, open the *Settings* dialog, then select *Keyboard* from the navigation pane.
- To change the key combination that switches between input methods, use *Keyboard* > *Keyboard Shortcuts*. Then select the category *Typing* and the entry *Switch to next input source*.

To modify other keyboard shortcuts, select *Keyboard* > *Keyboard Shortcuts*.

This dialog shows the keyboard shortcuts that are configured for your system. To edit a key combination, click the entry that you want to change. To set a new key combination, press the respective keys. To disable a shortcut, press  instead.

5.4 Entering special characters using the Compose Key

GNOME offers the *Compose Key* that allows you to type a variety of special characters and symbols by pressing the designated *Compose Key* followed by a sequence of other keys.

To enable and configure the *Compose Key*, open *Settings* > *Keyboard*.

In the main panel, locate the *Special Character Entry* section and select *Compose Key*. Turn it on and select which key on your keyboard will act as the Compose Key.

To use the *Compose Key*, press and release your chosen Compose Key, then type a specific sequence of two or more characters. For example:

- Press **Compose Key**, then **o** — **c** to enter ©.
- Press **Compose Key**, then **a** — **'** to enter á.
- Press **Compose Key**, then **<** — **=** to enter \leq .
- Press **Compose Key**, then **1** — **2** to enter $\frac{1}{2}$.

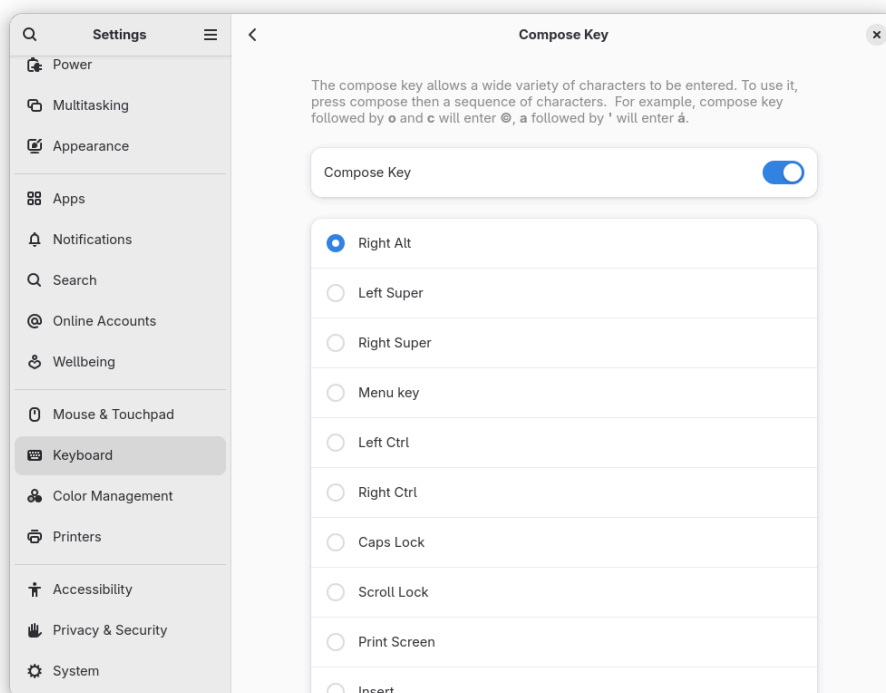


FIGURE 4: ENABLING THE COMPOSE KEY IN TWEAKS

5.5 Configuring Bluetooth settings

The Bluetooth module lets you set the visibility of your machine over Bluetooth and connect to available Bluetooth devices. To configure Bluetooth connectivity, follow these steps:

1. Right-click the desktop and choose *Settings* > *Bluetooth*.

2. To use Bluetooth, set the switch at the top on.
Your computer is visible as long as the Bluetooth panel is open.



Note: Temporary visibility

The *Visibility* switch is meant to be used only temporarily. You only need to turn it on for the initial setup of a connection to a Bluetooth device. After the connection has been established, turn off the switch.

3. On the device you want to connect, turn on Bluetooth connectivity and visibility, too.
4. If the device has been found and is shown in the list, click it to establish a connection to it.
You are asked whether the PINs of the two devices match.
5. If the PINs match, confirm this on *both* your computer and the device.
The pairing is now established. On your computer, the device in the list is shown as *Connected*.
Depending on the device type, it is also now available in other applications, for example, as a storage device in GNOME Files, or a sound device in playback applications.

To connect to a paired Bluetooth device, select the device in the list. In the dialog that appears, turn the *Connection* switch on. You can send files to the connected device by using the *Send Files* button. If you are connected to a device such as a mobile phone, you can use it as a network device by activating the appropriate option.

To remove a connected device from the list on your computer, click *Remove Device* and confirm your choice. To remove the pairing, you also need to do so on your device.

5.6 Configuring power settings

Settings available in this dialog depend on your hardware. In the following, the options that are typically available when using a laptop are described. On a workstation, many of the described options are not available.

1. Right-click the desktop and choose *Settings*.
2. In the navigation pane, select *Power*.
3. In the *Power Saving* section, set after how many minutes to blank the screen (or to not blank it at all).
4. In the *Automatic Screen Blank* section, configure the time after which the computer is paused after a certain period of inactivity.

5.7 Configuring mouse and touchpad

To modify mouse and touchpad options, right-click the desktop and choose *Settings*. Then select *Mouse & Touchpad*.

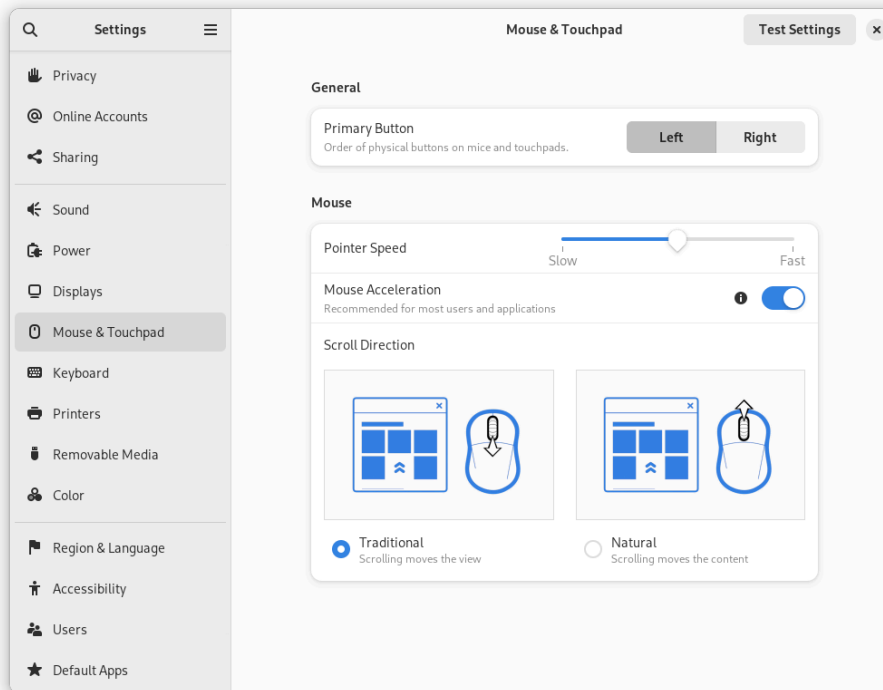



FIGURE 5: *MOUSE AND TOUCHPAD SETTINGS DIALOG*

- In the *General* section of the dialog, you can set the *Primary Button* orientation (left or right).
- In the *Mouse* section of the dialog, use *Pointer Speed* to adjust the sensitivity of the mouse pointer. With *Natural Scrolling*, you can set the direction in which the content moves when scrolling with the mouse. When natural scrolling is turned off, the content moves *up* while pushing the scroll wheel *down*. When natural scrolling is turned on, the content moves in the same direction as the mouse wheel.
- To test your settings, click *Test Settings* and try the pointing device.

For the configuration of mouse accessibility options, refer to the [Section 4.3.5, “Pointing and Clicking”](#).

5.8 Installing and configuring printers

The *Printers* dialog lets you connect to any available local or remote CUPS server and configure printers.

To start the Printers module, right-click the desktop and choose *Settings > Printers*. For detailed information, refer to <https://help.gnome.org/users/gnome-help/stable/printing.html.en> .

5.9 Configuring screens

To specify resolution and orientation for your screen or to configure multiple screens, right-click the desktop and choose *Display Settings*. The configuration options available in this dialog depend on whether you have a single or a multiple monitor setup.

5.9.1 Configuring single monitor setup

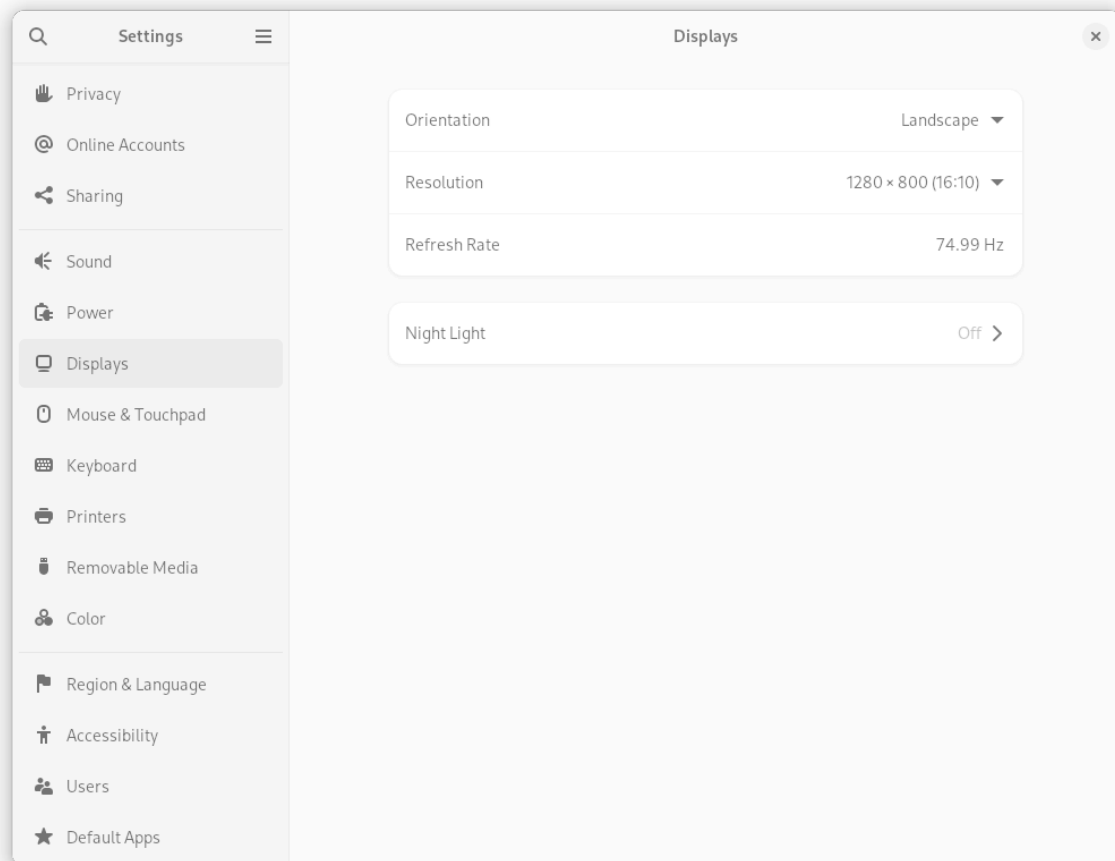


FIGURE 6: SINGLE MONITOR SETTINGS DIALOG

Orientation

If you use a monitor which can change its orientation, you need to adjust the display before turning the monitor. Use *Orientation* to do this. Choose the orientation your monitor supports, close the selection box and click *Apply*.

Resolution

To change the screen resolution, click *Resolution*. Choose a new value and click *Apply*.

Night Light

If you are working in a dark environment, your eyes can easily be strained by the monitor. To prevent this, change the screen's color palette to a warmer tone by turning on *Night Light*. Under *Schedule*, you can automate this setting by specifying at which time *Night Light* should be turned on and off.

5.9.2 Configuring multiple monitor setup

To set up an additional monitor, connect the monitor to your computer. If your system does not recognize it immediately, or you want to adjust the settings, do the following:

1. Open the *Activities* overview and start typing Displays.
2. Click *Displays* to open the panel.
3. In the display arrangement diagram, drag your displays to the relative positions you want.
4. Click *Primary Display* to choose your primary display.
The primary display is the one with the *top bar*, and where the *Activities* overview is shown.
5. Select the orientation, resolution or scale, and refresh rate.
6. Click *Apply*. The new settings are applied for 20 seconds before reverting. If you are happy with the settings, click *Keep Changes*.

With two or more screens, these display modes are available:

Join Display

The screen edges are joined so windows and dialogs can pass from one display to another.

Mirror

The same content is shown on all displays, with the same resolution and orientation for all.

Single display

Only one display is configured, effectively turning off the other displays. For example, an external monitor connected to a docked laptop with the lid closed.

5.10 Configuring sound settings

The *Sound* tool lets you manage sound devices. Here you can select the general output volume or turn the sound off.

To open the sound settings, right-click the desktop and choose *Settings* > *Sound*.

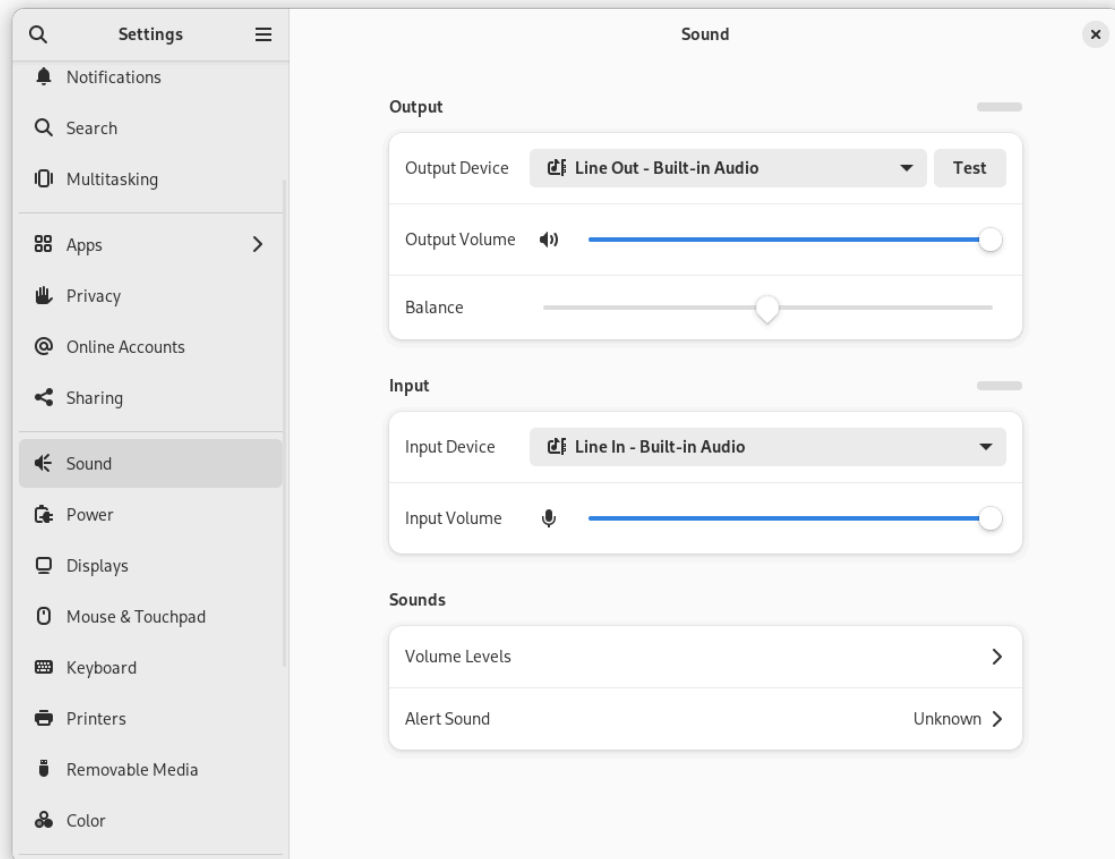


FIGURE 7: CONFIGURING SOUND SETTINGS

Use the *Output* category to select the device for sound output. Choose the *Output Volume* and *Balance* settings you prefer.

Use the *Input* category to set the input device volume or to mute the input temporarily. If you have more than one sound device, you can also select a default device for audio input in the *Input Device* list.

You can also choose an *Alert Sound*.

5.11 Configuring default applications

1. To change the default application for a common tasks, right-click the desktop and select *Settings > Apps > Default Apps*.

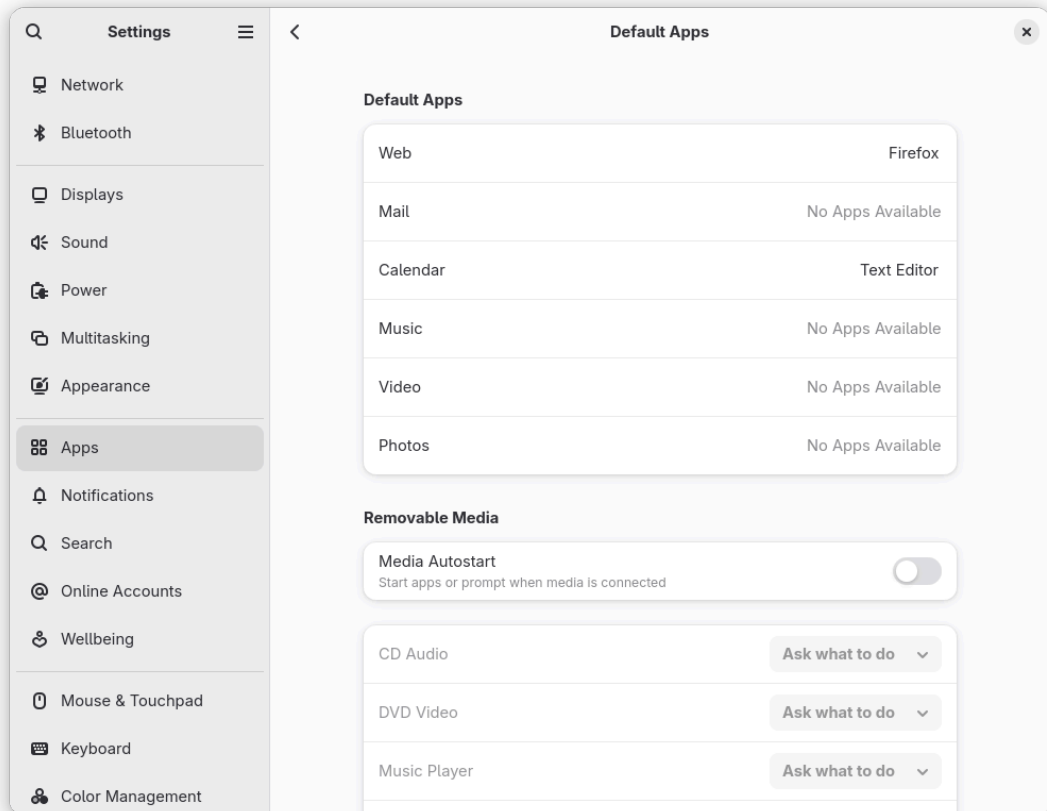


FIGURE 8: GNOME DEFAULT APPS

2. In the *Default Apps* section, you can select a preferred application. If no suitable application is installed for a category, it will be listed as No Apps Available. Click a category to view and select one of the available applications.

Below the default applications, the *Removable Media* section allows you to configure how the system handles media devices such as audio CDs, video DVDs or USB drives. You can enable or disable *Media Autostart* to control whether applications start automatically when media is connected. For each media type (CD Audio, DVD Video, Music Player, Photos), you can choose an action from a drop-down menu, such as Ask what to do or a specific application if available.

5.12 Configuring session sharing preferences

To configure desktop sharing for remote access, right-click the desktop and choose *Settings*. In the sidebar, scroll down and select *System > Remote Desktop > Desktop Sharing*.

Before you can share anything, you need to turn on the switch in the upper part of the dialog. The switch also helps you if you quickly need to disable all sharing options.

The *Remote Desktop* interface includes a *Remote Login* tab, where you can enable or disable remote access to your session. To allow remote logins, switch the *Remote Login* toggle to the “On” position and enter the administrator password.

6 For more information

SUSE Linux Enterprise Server for SAP applications comes with several sources of information and documentation, many of which are already integrated into your installed system.

To enter the Help of GNOME or LibreOffice directly from an application, click the *Help* button or press **F1** key. Both options take you directly to the application's documentation in the help center.

You can also start the Help of GNOME by opening a terminal and entering **yelp** or from the main menu by clicking *Apps > Help*.

For more information on how to work with GNOME Desktop, see <https://help.gnome.org>.

7 Legal Notice

Copyright© 2006–2025 SUSE LLC and contributors. All rights reserved.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or (at your option) version 1.3; with the Invariant Section being this copyright notice and license. A copy of the license version 1.2 is included in the section entitled “GNU Free Documentation License”.

For SUSE trademarks, see <https://www.suse.com/company/legal/>. All other third-party trademarks are the property of their respective owners. Trademark symbols (®, ™ etc.) denote trademarks of SUSE and its affiliates. Asterisks (*) denote third-party trademarks.

All information found in this book has been compiled with utmost attention to detail. However, this does not guarantee complete accuracy. Neither SUSE LLC, its affiliates, the authors, nor the translators shall be held liable for possible errors or the consequences thereof.

A GNU Free Documentation License

Copyright (C) 2000, 2001, 2002 Free Software Foundation, Inc. 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA. Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

0. PREAMBLE

The purpose of this License is to make a manual, textbook, or other functional and useful document "free" in the sense of freedom: to assure everyone the effective freedom to copy and redistribute it, with or without modifying it, either commercially or non-commercially. Secondly, this License preserves for the author and publisher a way to get credit for their work, while not being considered responsible for modifications made by others.

This License is a kind of "copyleft", which means that derivative works of the document must themselves be free in the same sense. It complements the GNU General Public License, which is a copyleft license designed for free software.

We have designed this License to use it for manuals for free software, because free software needs free documentation: a free program should come with manuals providing the same freedoms that the software does. But this License is not limited to software manuals; it can be used for any textual work, regardless of subject matter or whether it is published as a printed book. We recommend this License principally for works whose purpose is instruction or reference.

1. APPLICABILITY AND DEFINITIONS

This License applies to any manual or other work, in any medium, that contains a notice placed by the copyright holder saying it can be distributed under the terms of this License. Such a notice grants a world-wide, royalty-free license, unlimited in duration, to use that work under the conditions stated herein. The "Document", below, refers to any such manual or work. Any member of the public is a licensee, and is addressed as "you". You accept the license if you copy, modify or distribute the work in a way requiring permission under copyright law.

A "Modified Version" of the Document means any work containing the Document or a portion of it, either copied verbatim, or with modifications and/or translated into another language.

A "Secondary Section" is a named appendix or a front-matter section of the Document that deals exclusively with the relationship of the publishers or authors of the Document to the Document's overall subject (or to related matters) and contains nothing that could fall directly within that overall subject. (Thus, if the

Document is in part a textbook of mathematics, a Secondary Section may not explain any mathematics.) The relationship could be a matter of historical connection with the subject or with related matters, or of legal, commercial, philosophical, ethical or political position regarding them.

The "Invariant Sections" are certain Secondary Sections whose titles are designated, as being those of Invariant Sections, in the notice that says that the Document is released under this License. If a section does not fit the above definition of Secondary then it is not allowed to be designated as Invariant. The Document may contain zero Invariant Sections. If the Document does not identify any Invariant Sections then there are none.

The "Cover Texts" are certain short passages of text that are listed, as Front-Cover Texts or Back-Cover Texts, in the notice that says that the Document is released under this License. A Front-Cover Text may be at most 5 words, and a Back-Cover Text may be at most 25 words.

A "Transparent" copy of the Document means a machine-readable copy, represented in a format whose specification is available to the general public, that is suitable for revising the document straightforwardly with generic text editors or (for images composed of pixels) generic paint programs or (for drawings) some widely available drawing editor, and that is suitable for input to text formatters or for automatic translation to a variety of formats suitable for input to text formatters. A copy made in an otherwise Transparent file format whose markup, or absence of markup, has been arranged to thwart or discourage subsequent modification by readers is not Transparent. An image format is not Transparent if used for any substantial amount of text. A copy that is not "Transparent" is called "Opaque".

Examples of suitable formats for Transparent copies include plain ASCII without markup, Texinfo input format, LaTeX input format, SGML or XML using a publicly available DTD, and standard-conforming simple HTML, PostScript or PDF designed for human modification. Examples of transparent image formats include PNG, XCF and JPG. Opaque formats include proprietary formats that can be read and edited only by proprietary word processors, SGML or XML for which the DTD and/or processing tools are not generally available, and the machine-generated HTML, PostScript or PDF produced by some word processors for output purposes only.

The "Title Page" means, for a printed book, the title page itself, plus such following pages as are needed to hold, legibly, the material this License requires to appear in the title page. For works in formats which do not have any title page as such, "Title Page" means the text near the most prominent appearance of the work's title, preceding the beginning of the body of the text.

A section "Entitled XYZ" means a named subunit of the Document whose title either is precisely XYZ or contains XYZ in parentheses following text that translates XYZ in another language. (Here XYZ stands for a specific section name mentioned below, such as "Acknowledgements", "Dedications", "Endorsements", or "History".) To "Preserve the Title" of such a section when you modify the Document means that it remains a section "Entitled XYZ" according to this definition.

The Document may include Warranty Disclaimers next to the notice which states that this License applies to the Document. These Warranty Disclaimers are considered to be included by reference in this License, but only as regards disclaiming warranties: any other implication that these Warranty Disclaimers may have is void and has no effect on the meaning of this License.

2. VERBATIM COPYING

You may copy and distribute the Document in any medium, either commercially or non-commercially, provided that this License, the copyright notices, and the license notice saying this License applies to the Document are reproduced in all copies, and that you add no other conditions whatsoever to those of this License. You may not use technical measures to obstruct or control the reading or further copying of the copies you make or distribute. However, you may accept compensation in exchange for copies. If you distribute a large enough number of copies you must also follow the conditions in section 3.

You may also lend copies, under the same conditions stated above, and you may publicly display copies.

3. COPYING IN QUANTITY

If you publish printed copies (or copies in media that commonly have printed covers) of the Document, numbering more than 100, and the Document's license notice requires Cover Texts, you must enclose the copies in covers that carry, clearly and legibly, all these Cover Texts: Front-Cover Texts on the front cover, and Back-Cover Texts on the back cover. Both covers must also clearly and legibly identify you as the publisher of these copies. The front cover must present the full title with all words of the title equally prominent and visible. You may add other material on the covers in addition. Copying with changes limited to the covers, as long as they preserve the title of the Document and satisfy these conditions, can be treated as verbatim copying in other respects.

If the required texts for either cover are too voluminous to fit legibly, you should put the first ones listed (as many as fit reasonably) on the actual cover, and continue the rest onto adjacent pages.

If you publish or distribute Opaque copies of the Document numbering more than 100, you must either include a machine-readable Transparent copy along with each Opaque copy, or state in or with each Opaque copy a computer-network location from which the general network-using public has access to download using public-standard network protocols a complete Transparent copy of the Document, free of added material. If you use the latter option, you must take reasonably prudent steps, when you begin distribution of Opaque copies in quantity, to ensure that this Transparent copy will remain thus accessible at the stated location until at least one year after the last time you distribute an Opaque copy (directly or through your agents or retailers) of that edition to the public.

It is requested, but not required, that you contact the authors of the Document well before redistributing any large number of copies, to give them a chance to provide you with an updated version of the Document.

4. MODIFICATIONS

You may copy and distribute a Modified Version of the Document under the conditions of sections 2 and 3 above, provided that you release the Modified Version under precisely this License, with the Modified Version filling the role of the Document, thus licensing distribution and modification of the Modified Version to whoever possesses a copy of it. In addition, you must do these things in the Modified Version:

- A. Use in the Title Page (and on the covers, if any) a title distinct from that of the Document, and from those of previous versions (which should, if there were any, be listed in the History section of the Document). You may use the same title as a previous version if the original publisher of that version gives permission.
- B. List on the Title Page, as authors, one or more persons or entities responsible for authorship of the modifications in the Modified Version, together with at least five of the principal authors of the Document (all of its principal authors, if it has fewer than five), unless they release you from this requirement.
- C. State on the Title page the name of the publisher of the Modified Version, as the publisher.
- D. Preserve all the copyright notices of the Document.
- E. Add an appropriate copyright notice for your modifications adjacent to the other copyright notices.
- F. Include, immediately after the copyright notices, a license notice giving the public permission to use the Modified Version under the terms of this License, in the form shown in the Addendum below.
- G. Preserve in that license notice the full lists of Invariant Sections and required Cover Texts given in the Document's license notice.
- H. Include an unaltered copy of this License.
- I. Preserve the section Entitled "History", Preserve its Title, and add to it an item stating at least the title, year, new authors, and publisher of the Modified Version as given on the Title Page. If there is no section Entitled "History" in the Document, create one stating the title, year, authors, and publisher of the Document as given on its Title Page, then add an item describing the Modified Version as stated in the previous sentence.

- J. Preserve the network location, if any, given in the Document for public access to a Transparent copy of the Document, and likewise the network locations given in the Document for previous versions it was based on. These may be placed in the "History" section. You may omit a network location for a work that was published at least four years before the Document itself, or if the original publisher of the version it refers to gives permission.
- K. For any section Entitled "Acknowledgements" or "Dedications", Preserve the Title of the section, and preserve in the section all the substance and tone of each of the contributor acknowledgements and/or dedications given therein.
- L. Preserve all the Invariant Sections of the Document, unaltered in their text and in their titles. Section numbers or the equivalent are not considered part of the section titles.
- M. Delete any section Entitled "Endorsements". Such a section may not be included in the Modified Version.
- N. Do not retitle any existing section to be Entitled "Endorsements" or to conflict in title with any Invariant Section.
- O. Preserve any Warranty Disclaimers.

If the Modified Version includes new front-matter sections or appendices that qualify as Secondary Sections and contain no material copied from the Document, you may at your option designate some or all of these sections as invariant. To do this, add their titles to the list of Invariant Sections in the Modified Version's license notice. These titles must be distinct from any other section titles.

You may add a section Entitled "Endorsements", provided it contains nothing but endorsements of your Modified Version by various parties--for example, statements of peer review or that the text has been approved by an organization as the authoritative definition of a standard.

You may add a passage of up to five words as a Front-Cover Text, and a passage of up to 25 words as a Back-Cover Text, to the end of the list of Cover Texts in the Modified Version. Only one passage of Front-Cover Text and one of Back-Cover Text may be added by (or through arrangements made by) any one entity. If the Document already includes a cover text for the same cover, previously added by you or by arrangement made by the same entity you are acting on behalf of, you may not add another; but you may replace the old one, on explicit permission from the previous publisher that added the old one.

The author(s) and publisher(s) of the Document do not by this License give permission to use their names for publicity for or to assert or imply endorsement of any Modified Version.

5. COMBINING DOCUMENTS

You may combine the Document with other documents released under this License, under the terms defined in section 4 above for modified versions, provided that you include in the combination all of the Invariant Sections of all of the original documents, unmodified, and list them all as Invariant Sections of your combined work in its license notice, and that you preserve all their Warranty Disclaimers.

The combined work need only contain one copy of this License, and multiple identical Invariant Sections may be replaced with a single copy. If there are multiple Invariant Sections with the same name but different contents, make the title of each such section unique by adding at the end of it, in parentheses, the name of the original author or publisher of that section if known, or else a unique number. Make the same adjustment to the section titles in the list of Invariant Sections in the license notice of the combined work.

In the combination, you must combine any sections Entitled "History" in the various original documents, forming one section Entitled "History"; likewise combine any sections Entitled "Acknowledgements", and any sections Entitled "Dedications". You must delete all sections Entitled "Endorsements".

6. COLLECTIONS OF DOCUMENTS

You may make a collection consisting of the Document and other documents released under this License, and replace the individual copies of this License in the various documents with a single copy that is included in the collection, provided that you follow the rules of this License for verbatim copying of each of the documents in all other respects.

You may extract a single document from such a collection, and distribute it individually under this License, provided you insert a copy of this License into the extracted document, and follow this License in all other respects regarding verbatim copying of that document.

7. AGGREGATION WITH INDEPENDENT WORKS

A compilation of the Document or its derivatives with other separate and independent documents or works, in or on a volume of a storage or distribution medium, is called an "aggregate" if the copyright resulting from the compilation is not used to limit the legal rights of the compilation's users beyond what the individual works permit. When the Document is included in an aggregate, this License does not apply to the other works in the aggregate which are not themselves derivative works of the Document.

If the Cover Text requirement of section 3 is applicable to these copies of the Document, then if the Document is less than one half of the entire aggregate, the Document's Cover Texts may be placed on covers that bracket the Document within the aggregate, or the electronic equivalent of covers if the Document is in electronic form. Otherwise they must appear on printed covers that bracket the whole aggregate.

8. TRANSLATION

Translation is considered a kind of modification, so you may distribute translations of the Document under the terms of section 4. Replacing Invariant Sections with translations requires special permission from their copyright holders, but you may include translations of some or all Invariant Sections in addition to the original versions of these Invariant Sections. You may include a translation of this License, and all the license notices in the Document, and any Warranty Disclaimers, provided that you also include the original English version of this License and the original versions of those notices and disclaimers. In case of a disagreement between the translation and the original version of this License or a notice or disclaimer, the original version will prevail.

If a section in the Document is Entitled "Acknowledgements", "Dedications", or "History", the requirement (section 4) to Preserve its Title (section 1) will typically require changing the actual title.

9. TERMINATION

You may not copy, modify, sublicense, or distribute the Document except as expressly provided for under this License. Any other attempt to copy, modify, sublicense or distribute the Document is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

10. FUTURE REVISIONS OF THIS LICENSE

The Free Software Foundation may publish new, revised versions of the GNU Free Documentation License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns. See <https://www.gnu.org/copyleft/>.

Each version of the License is given a distinguishing version number. If the Document specifies that a particular numbered version of this License "or any later version" applies to it, you have the option of following the terms and conditions either of that specified version or of any later version that has been published (not as a draft) by the Free Software Foundation. If the Document does not specify a version number of this License, you may choose any version ever published (not as a draft) by the Free Software Foundation.

ADDENDUM: How to use this License for your documents

Copyright (c) YEAR YOUR NAME.

```
Permission is granted to copy, distribute and/or modify this document
under the terms of the GNU Free Documentation License, Version 1.2
or any later version published by the Free Software Foundation;
with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts.
A copy of the license is included in the section entitled "GNU
Free Documentation License".
```

If you have Invariant Sections, Front-Cover Texts and Back-Cover Texts, replace the “with...Texts.” line with this:

```
with the Invariant Sections being LIST THEIR TITLES, with the
Front-Cover Texts being LIST, and with the Back-Cover Texts being LIST.
```

If you have Invariant Sections without Cover Texts, or some other combination of the three, merge those two alternatives to suit the situation.

If your document contains nontrivial examples of program code, we recommend releasing these examples in parallel under your choice of free software license, such as the GNU General Public License, to permit their use in free software.