



Red Hat

Red Hat Enterprise Linux 10

Using the GNOME desktop environment

Use and customize the desktop environment provided with RHEL 10.

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Abstract

Learn how to perform user tasks in the GNOME desktop environment in RHEL 10. For administrative tasks, see Administering RHEL by using the GNOME desktop environment

Table of Contents

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION	4
CHAPTER 1. OVERVIEW OF GNOME INTERFACES	5
1.1. GNOME INTERFACES AND DISPLAY PROTOCOLS	5
1.2. GNOME STANDARD	5
1.3. GNOME CLASSIC	7
1.4. SELECTING A GNOME INTERFACE	8
CHAPTER 2. REGISTERING THE SYSTEM FOR UPDATES BY USING GNOME	10
2.1. REGISTERING A SYSTEM BY USING AN ACTIVATION KEY ON GNOME	10
2.2. UNREGISTERING THE SYSTEM BY USING GNOME	11
2.3. ADDITIONAL RESOURCES	12
CHAPTER 3. LAUNCHING APPLICATIONS IN GNOME	13
3.1. LAUNCHING AN APPLICATION IN THE STANDARD GNOME SESSION	13
3.2. LAUNCHING AN APPLICATION IN GNOME CLASSIC	14
3.3. LAUNCHING AN APPLICATION IN GNOME BY USING A COMMAND	14
CHAPTER 4. CONFIGURING APPLICATIONS TO START AUTOMATICALLY ON LOGIN	16
CHAPTER 5. SEARCHING FOR FILES IN GNOME	17
5.1. PERFORMING A BASIC FILE SEARCH	17
5.2. PERFORMING AN ADVANCED FILE SEARCH	17
CHAPTER 6. BOOKMARKING FILES AND LOCATIONS	20
6.1. ADDING A BOOKMARK	20
6.2. REMOVING A BOOKMARK	21
6.3. RENAMING A BOOKMARK	22
6.4. ADDING A BOOKMARK FOR ALL USERS	23
CHAPTER 7. RECORDING YOUR SCREEN IN GNOME	25
CHAPTER 8. CUSTOMIZING THE DESKTOP ENVIRONMENT	26
8.1. CHANGING THE LANGUAGE BY USING DESKTOP GUI	26
8.2. ENABLING CHINESE, JAPANESE, OR KOREAN TEXT INPUT	28
8.2.1. Input methods	28
8.2.2. Switching the input method in GNOME	29
8.2.3. Additional resources	31
8.3. ENABLING DESKTOP ICONS	31
8.3.1. Desktop icons	32
8.3.2. Enabling desktop icons in GNOME Standard	32
8.3.3. Creating a desktop icon for a file	33
8.4. USING SPECIAL CHARACTERS IN GNOME	34
8.4.1. Enabling the compose key for an individual user	34
8.4.2. Enabling the compose key for another user	35
8.4.3. Enabling the compose key for all users	36
8.4.4. Compose key sequences for special characters	36
CHAPTER 9. ENABLING ACCESSIBILITY FOR VISUALLY IMPAIRED USERS	38
9.1. COMPONENTS THAT PROVIDE ACCESSIBILITY FEATURES	38
9.2. ENABLING THE ACCESSIBILITY MENU	38
9.3. ENABLING THE SCREEN READER	39
9.4. ENABLING A BRAILLE DISPLAY DEVICE	39
9.4.1. Supported types of Braille display device	40

9.4.2. Enabling the brltty service	40
9.4.3. Authorizing users of a Braille display device	41
9.4.4. Setting the driver for a Braille display device	41
9.4.5. Connecting a Braille display device	41
9.4.6. Setting the text table	43
9.4.7. Setting the contraction table	43
CHAPTER 10. BROWSING FILES ON A NETWORK SHARE	44
10.1. GVFS URI FORMAT FOR NETWORK SHARES	44
10.2. MOUNTING A STORAGE VOLUME IN GNOME	44
10.3. UNMOUNTING A STORAGE VOLUME IN GNOME	45
10.4. ADDITIONAL RESOURCES	45
CHAPTER 11. CONFIGURING FILE ASSOCIATIONS	46
11.1. MULTIPURPOSE INTERNET MAIL EXTENSION TYPES	46
MIME database	46
11.2. ADDING A CUSTOM MIME TYPE FOR ALL USERS	47
11.3. ADDING A CUSTOM MIME TYPE FOR INDIVIDUAL USERS	48
11.4. OPTIONS TO OVERRIDE DEFAULT MIME TYPES	49
11.5. OVERRIDING DEFAULT REGISTERED APPLICATION FOR ALL THE USERS	50
11.6. OVERRIDING DEFAULT REGISTERED APPLICATION FOR INDIVIDUAL USERS	50

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CHAPTER 1. OVERVIEW OF GNOME INTERFACES

You can switch between several user interfaces in GNOME.



IMPORTANT

To work correctly, GNOME requires your system to support **3D acceleration**. This includes bare-metal systems as well as hypervisor solutions such as **VMWare**.

If GNOME does not start or performs poorly on your VMWare virtual machine (VM), see [Why does the GUI fail to start on my VMware virtual machine?](#) (Red Hat Knowledgebase).

1.1. GNOME INTERFACES AND DISPLAY PROTOCOLS

You can use one of the following GNOME user interfaces in RHEL 10:

- GNOME Standard (default in RHEL 10)
- GNOME Classic

Both interfaces are provided by **GNOME Shell**, which is a **Wayland** display server. Applications communicate with GNOME shell by using the **Wayland** protocol. The combination of GNOME Shell and Wayland can be referred to as **GNOME Shell on Wayland**

Input devices

RHEL 10 uses a unified input stack, **libinput**, which manages all common device types, such as mice, touchpads, touchscreens, tablets, trackballs and pointing sticks.

GNOME Shell on Wayland uses **libinput** directly for all devices, and no switchable driver support is available.

Additional resources

- For information about how to switch the environments, see [GNOME interfaces and display protocol](#).

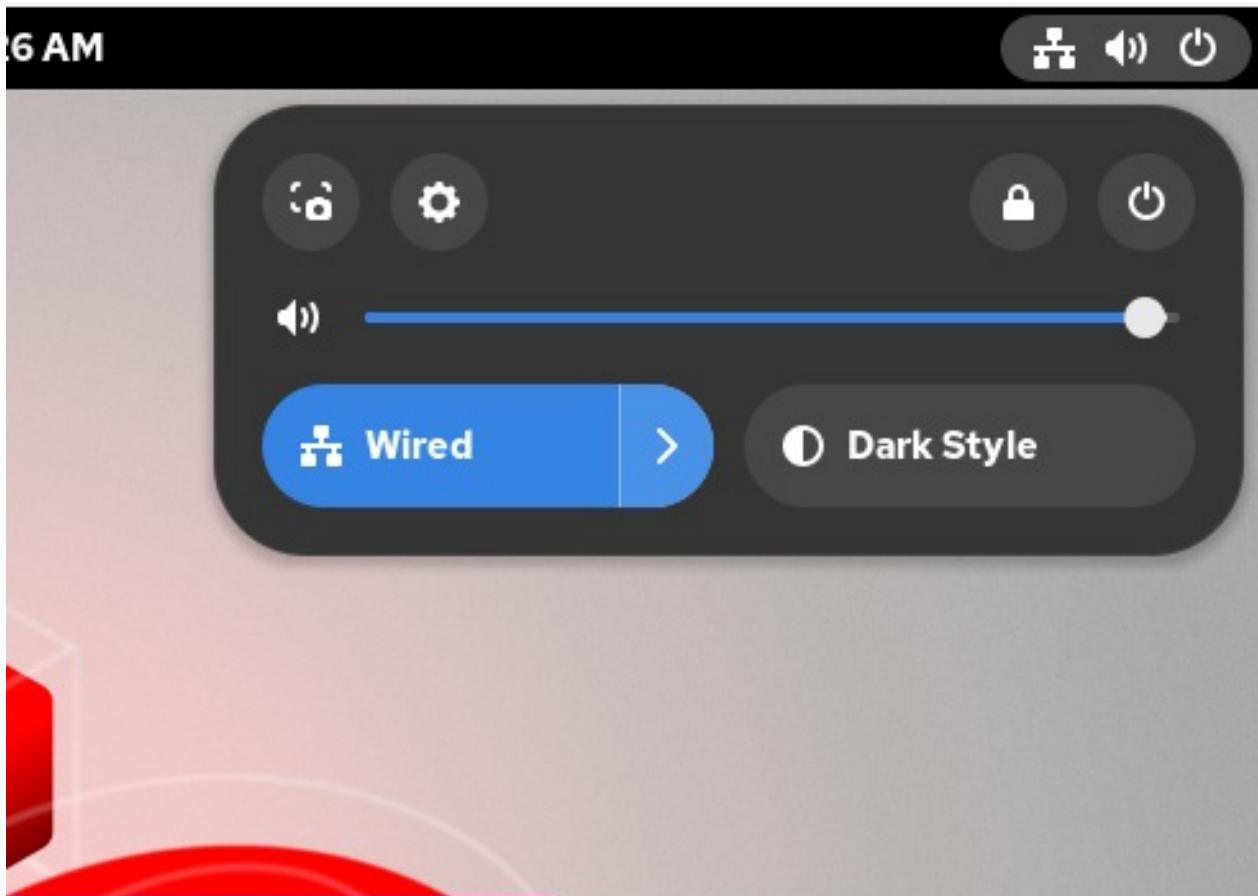
1.2. GNOME STANDARD

The GNOME Standard user interface includes these major components:

Top bar

The horizontal bar at the top of the screen provides access to some of the basic functions of GNOME Standard, such as the **Activities Overview**, clock and calendar, system status icons, and the **settings menu**.

Settings menu



Located in the upper-right corner, it provides the following functionalities:

- Opening the GNOME screenshot and screen recording tool
- Opening the Settings app
- Controlling the sound volume
- Accessing your network connections
- Turning off the computer, locking the computer, and switching user

Activities Overview

Includes windows and applications views that let you run applications and windows and switch between them.

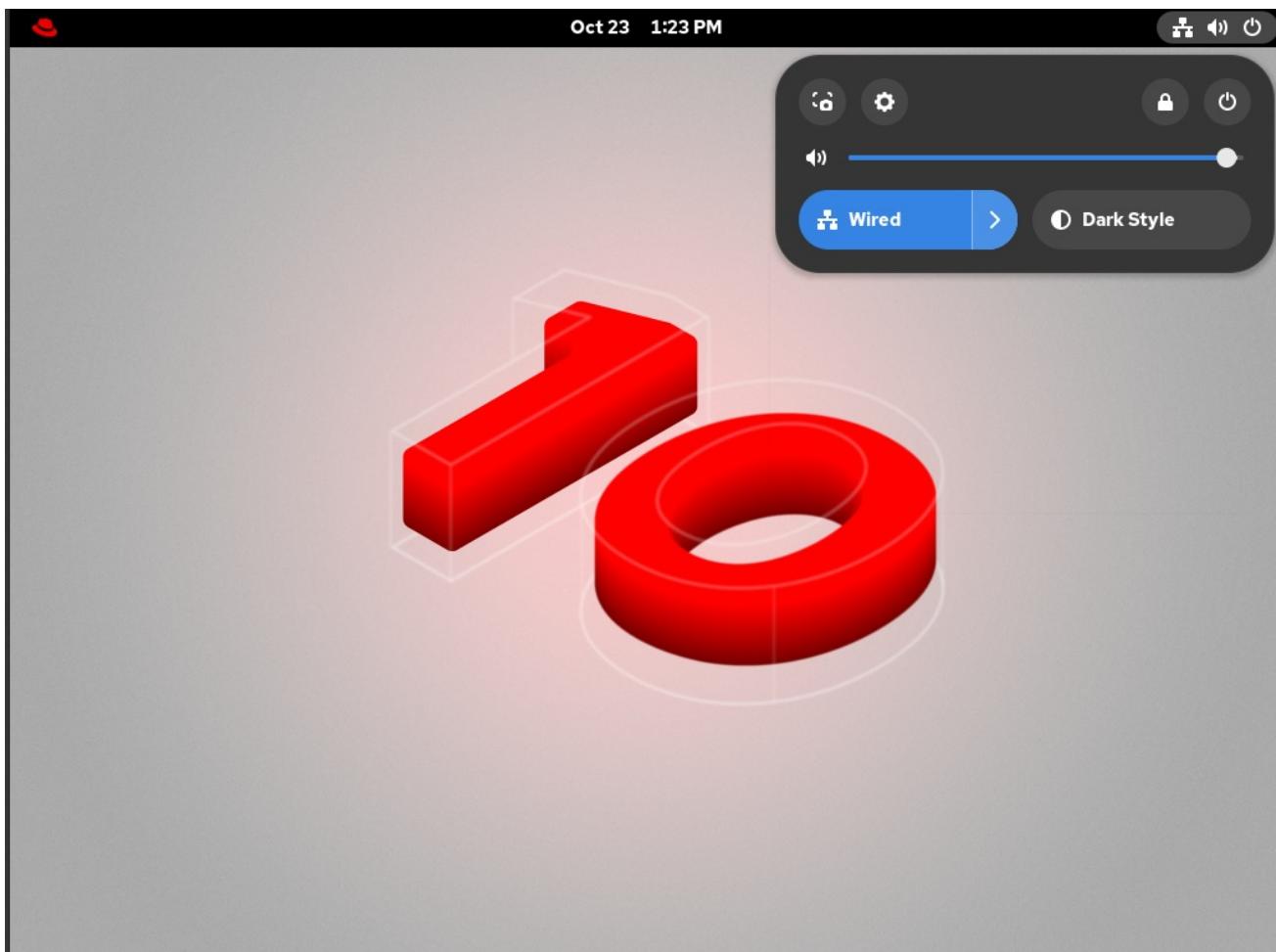
The **search entry** at the top allows for searching various items available on the desktop, including applications, documents, files, and configuration tools.

The horizontal bar on the bottom contains a list of favorite and running applications. You can add or remove applications from the default list of favorites.

Calendar popover

You can open it by clicking the date and time in the top bar. It includes recent notifications, a calendar, a calendar events list, world clocks, and weather.

The GNOME Standard desktop



1.3. GNOME CLASSIC

GNOME Classic is a mode suitable for users who prefer a more traditional desktop experience that is similar to the GNOME 2 environment used with RHEL 6. It is based on GNOME 3 technologies but includes multiple features similar to GNOME 2.

The GNOME Classic user interface consists of these major components:

Applications and Places

The **Apps** menu is displayed at the upper-left corner of the screen. It gives you access to applications organized into categories.

The **Places** menu is displayed next to the **Apps** menu in the top bar. It gives you quick access to important folders, for example, Downloads or Pictures.

Taskbar

Displayed at the bottom of the screen. The taskbar includes a list of open windows and a workspace indicator. In the workspace indicator, you can see the current workspace and move between available workspaces.

Four available workspaces

In GNOME Classic, the number of available workspaces is set to four by default.

Minimize and maximize buttons

Window title bars in GNOME Classic feature the minimize and maximize buttons.

A traditional Super+Tab window switcher

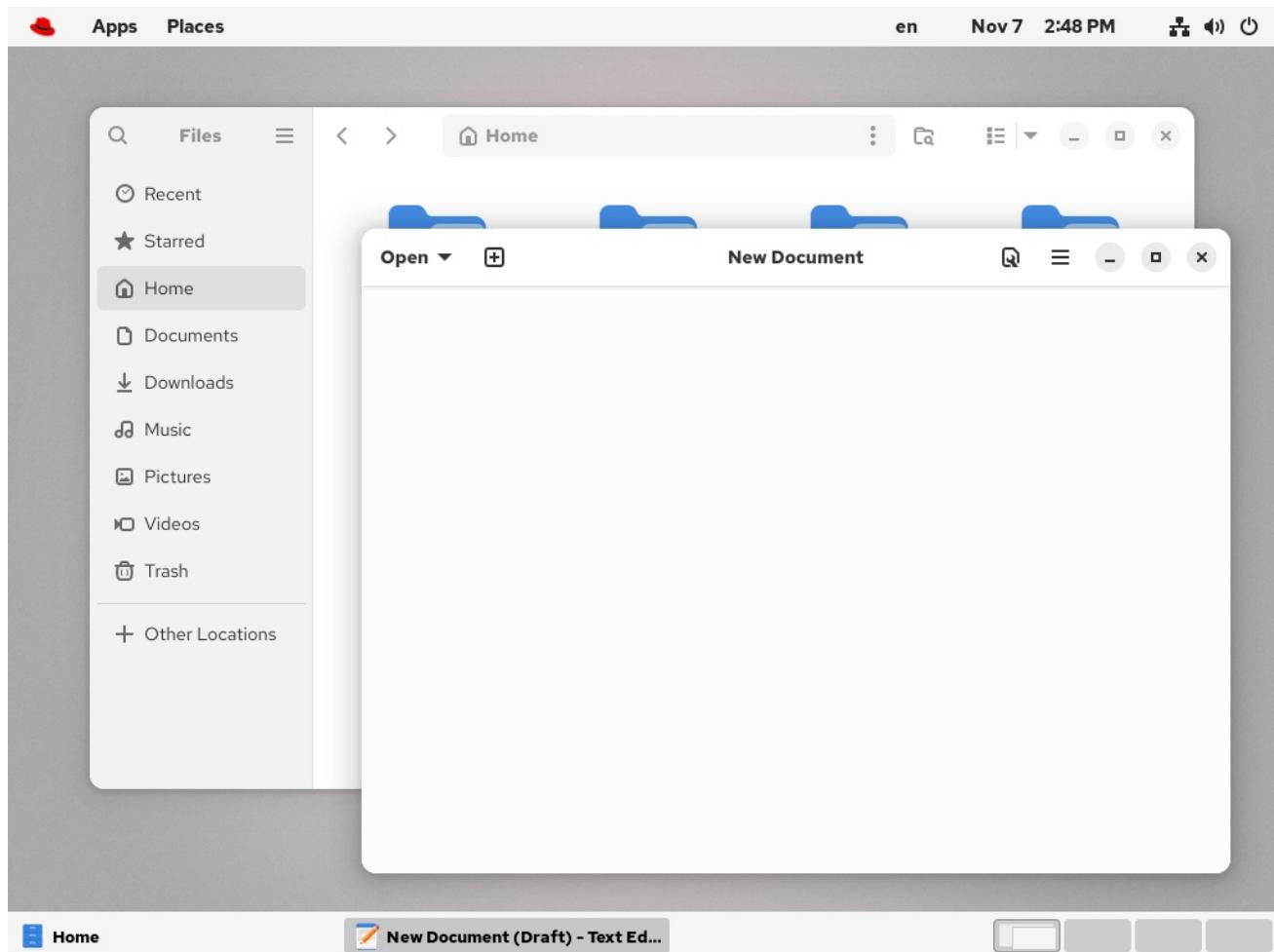
In GNOME Classic, windows in the **Super+Tab** window switcher are not grouped by application.

System menu

Located in the upper-right corner. Just as in the GNOME Standard session, you can perform the following actions with it:

- Opening the GNOME Screenshot and GNOME Screen Recording apps
- Opening the Settings app
- Controlling the sound volume
- Accessing your network connections
- Turning off the computer, locking the computer, and switching the user

The GNOME Classic desktop



1.4. SELECTING A GNOME INTERFACE

The default desktop interface for RHEL 10 is the standard GNOME desktop. However, you can also switch from standard GNOME to GNOME Classic.

The change of GNOME interface is persistent across user logouts, and also when powering off or rebooting the computer.

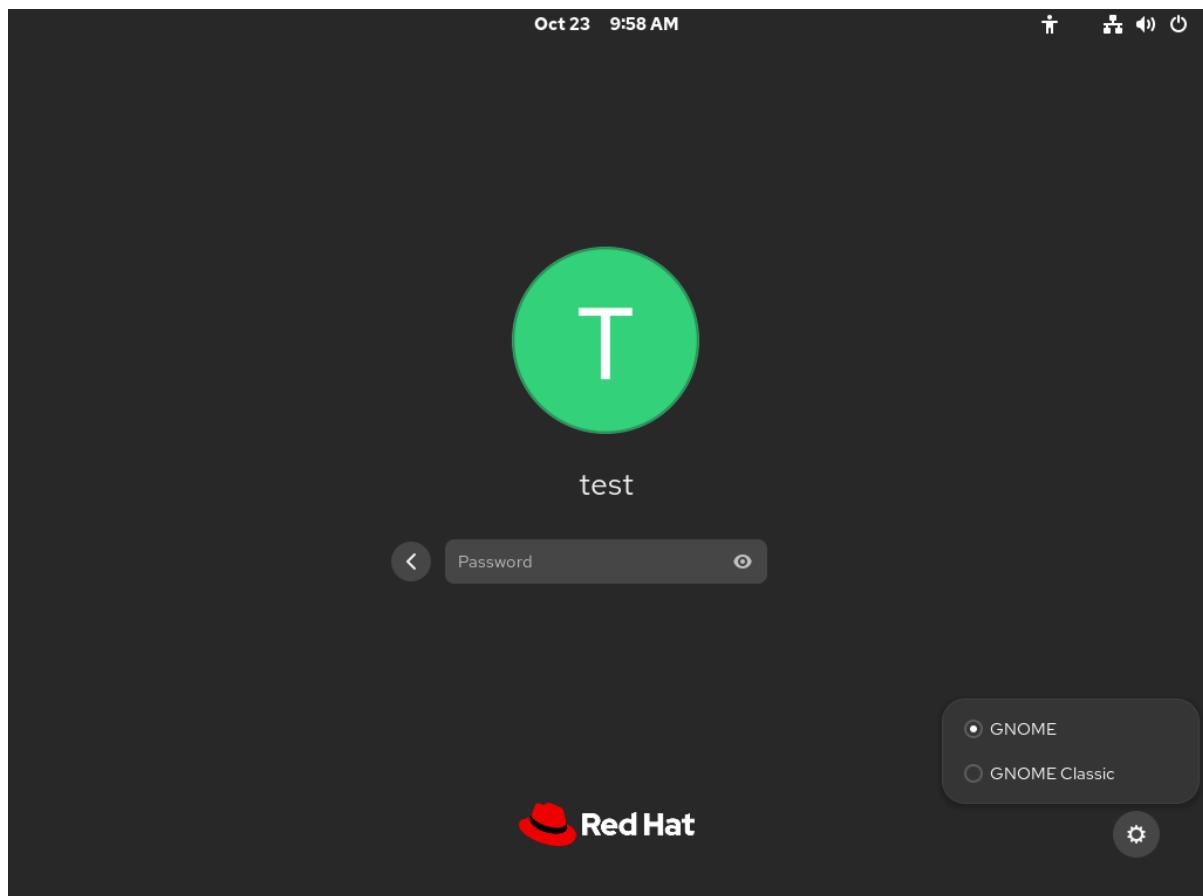
Procedure

1. On the login screen, select a user, then click the gear button in the lower-right corner of the screen.



NOTE

You cannot access this option from the lock screen. The login screen, also called GNOME Display Manager (GDM), appears when you first start RHEL or when you log out of your current session.



2. From the drop-down menu that appears, select the option that you prefer.

CHAPTER 2. REGISTERING THE SYSTEM FOR UPDATES BY USING GNOME

You must register your system to get software updates for your system. This section explains how you can register your system by using GNOME.

Prerequisites

- A valid account with Red Hat Customer Portal.
See the [Create a Red Hat Login](#) page for new user registration.
- Activation Key or keys, if you are registering the system with activation key
- A registration server, if you are registering system using the registration server

2.1. REGISTERING A SYSTEM BY USING AN ACTIVATION KEY ON GNOME

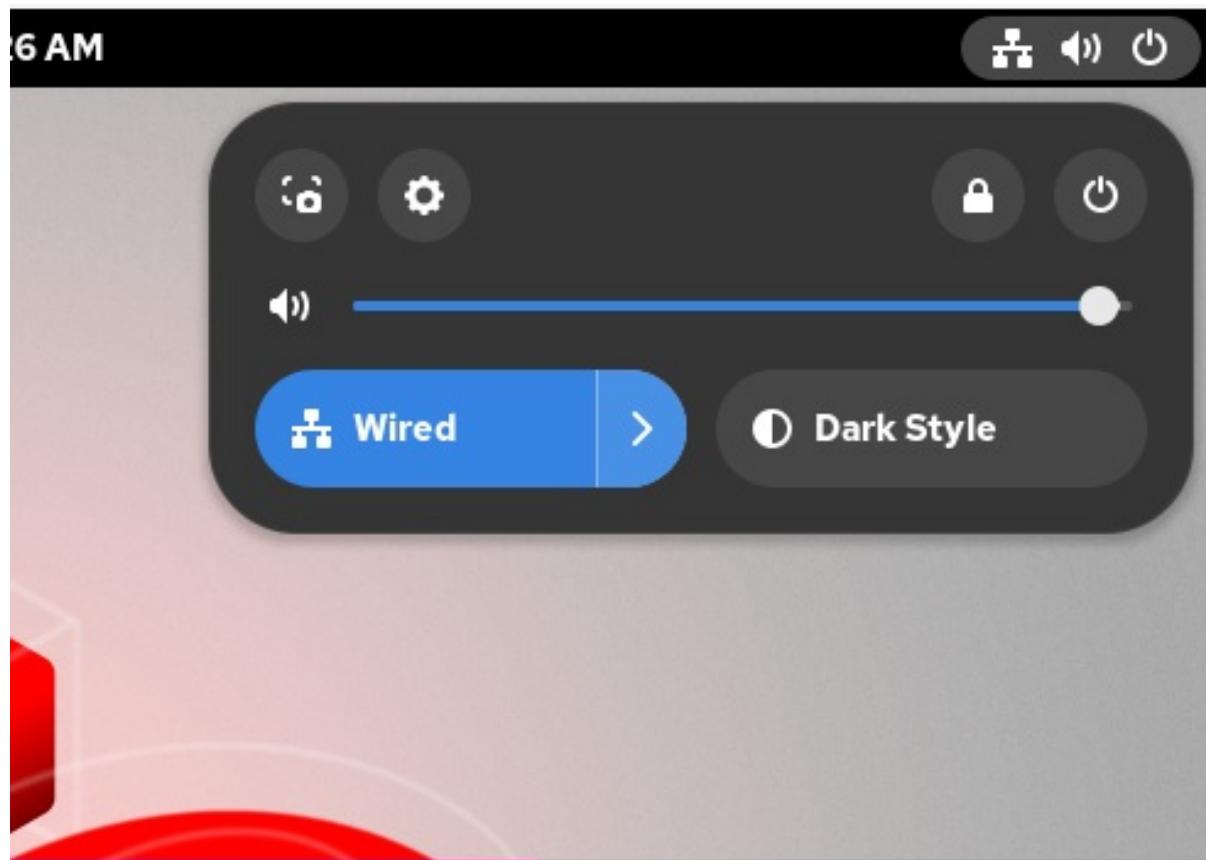
Follow the steps in this procedure to register your system with an activation key. You can get the activation key from your organization administrator.

Prerequisites

- Activation key or keys.
See the [Activation Keys](#) page for creating new activation keys.

Procedure

1. Open the **system menu**, which is accessible from the upper-right screen corner, and click **Settings**.



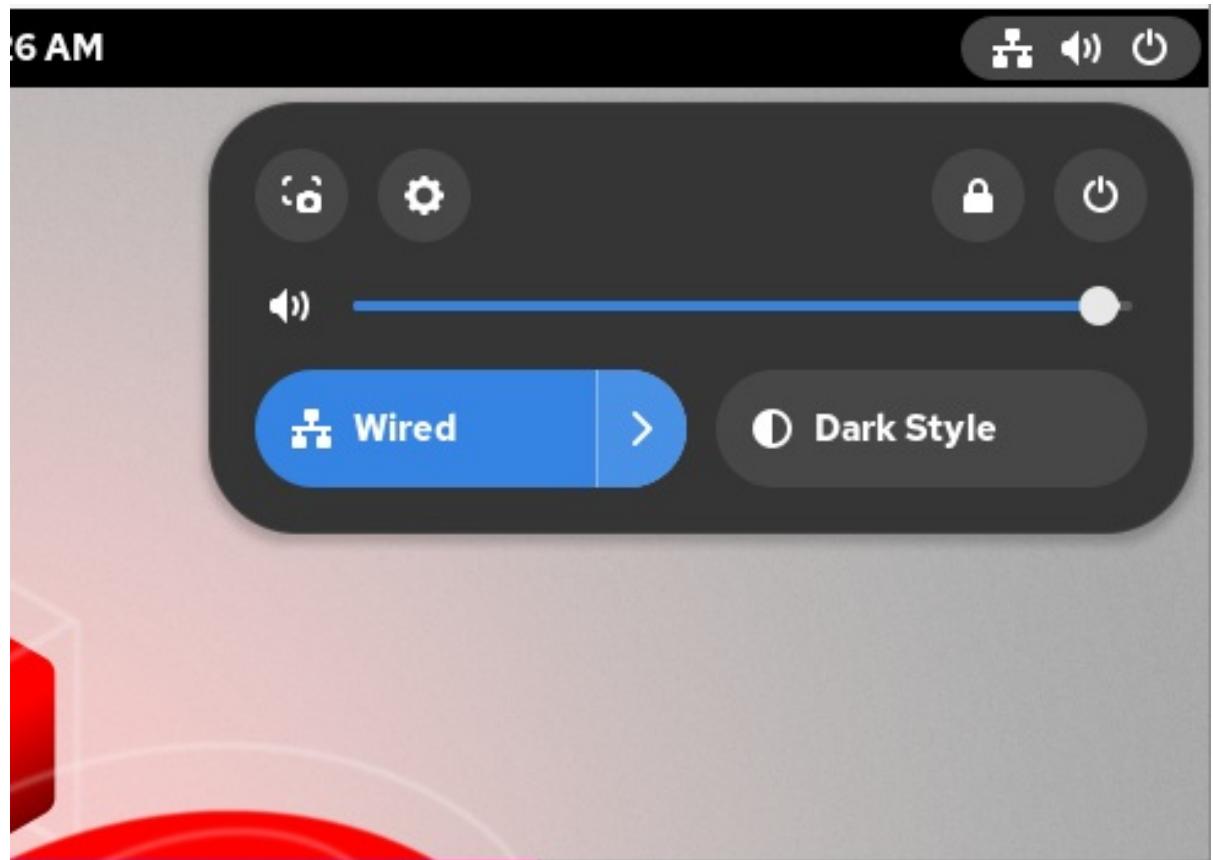
2. Go to **About → Subscription**.
3. If you are not using the Red Hat server:
 - a. In the **Registration Server** section, select **Custom Address**.
 - b. Enter the server address in the **URL** field.
4. In the **Registration Type** section, select **Activation Keys**.
5. Under **Registration Details**:
 - Enter your activation keys in the **Activation Keys** field.
Separate your keys by a comma (,).
 - Enter the name or ID of your organization in the **Organization** field.
6. Click **Register**.

2.2. UNREGISTERING THE SYSTEM BY USING GNOME

Follow the steps in this procedure to unregister your system. After unregistering, your system no longer receives software updates.

Procedure

1. Open the **system menu**, which is accessible from the upper-right screen corner, and click **Settings**.



2. Go to **About** → **Subscription**.
The **Registration Details** screen is displayed.
3. Click **Unregister**.
A warning is displayed about the impact of unregistering the system.
4. Click **Unregister**.

2.3. ADDITIONAL RESOURCES

- [Registering RHEL 10 using the installer GUI](#)
- [Creating Red Hat Customer Portal Activation Keys \(Red Hat Knowledgebase\)](#)
- [Creating and managing activation keys](#)
- [Registering Systems with Activation keys \(Red Hat Knowledgebase\)](#)

CHAPTER 3. LAUNCHING APPLICATIONS IN GNOME

You can launch installed applications by using several different methods in the GNOME desktop environment.

3.1. LAUNCHING AN APPLICATION IN THE STANDARD GNOME SESSION

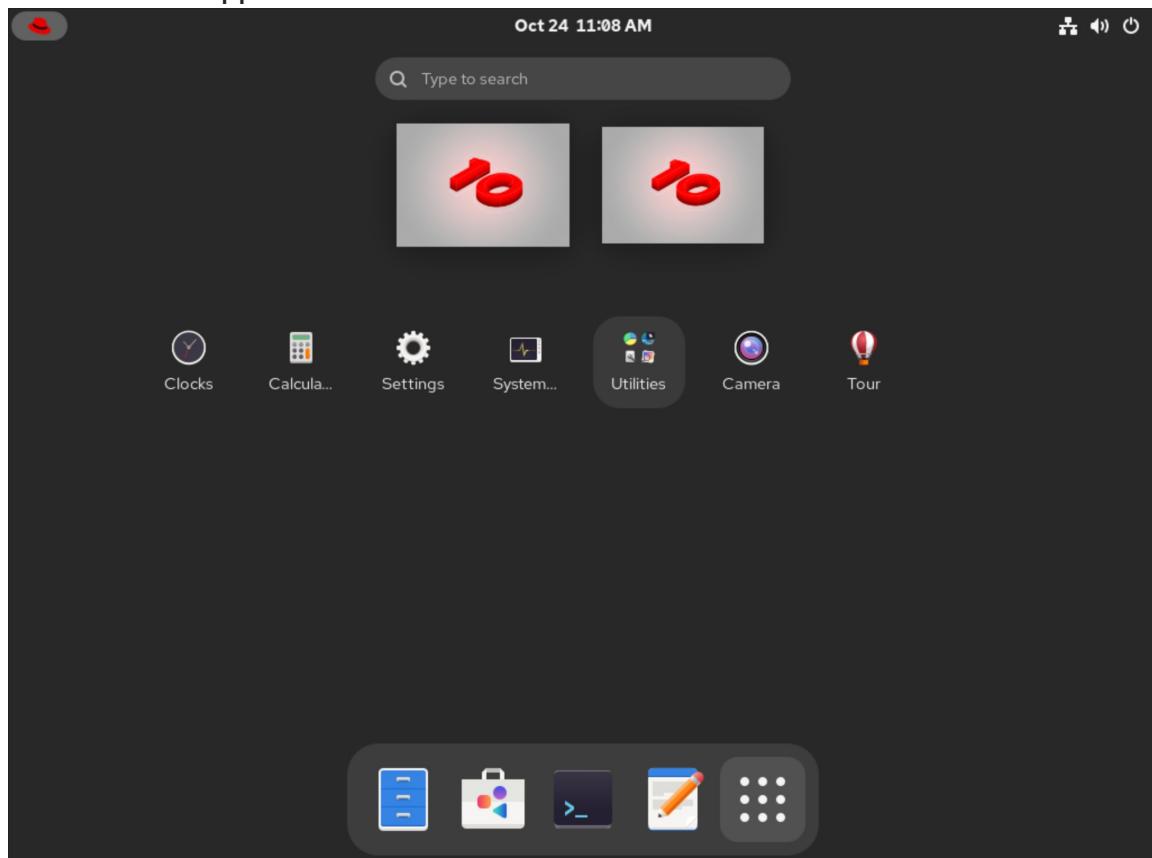
In the GNOME desktop environment, you can launch graphical applications that have been installed on your system.

Prerequisites

- You are using the standard GNOME session.

Procedure

1. Open the **Activities Overview** screen by using either of the following ways:
 - Click the **Red Hat logo** in the top panel.
 - Press the **Super** key, which is usually labeled with the Windows logo, **⌘**, or **.**
2. Find the application by using either of the following ways:
 - Click the **Show Apps** icon in the bottom horizontal bar.



- Type the name of the required application in the search text field.
3. Click the application in the displayed list.

3.2. LAUNCHING AN APPLICATION IN GNOME CLASSIC

In the GNOME desktop environment, you can launch graphical applications that have been installed on your system.

Prerequisites

- You are using the GNOME Classic session.

Procedure

1. Open the **Apps** menu in the top panel.
2. Choose the required application from the available categories, which can include:
 - Favorites
 - Accessories
 - Graphics
 - Internet
 - Office
 - Sound & Video
 - System Tools
 - Utilities

3.3. LAUNCHING AN APPLICATION IN GNOME BY USING A COMMAND

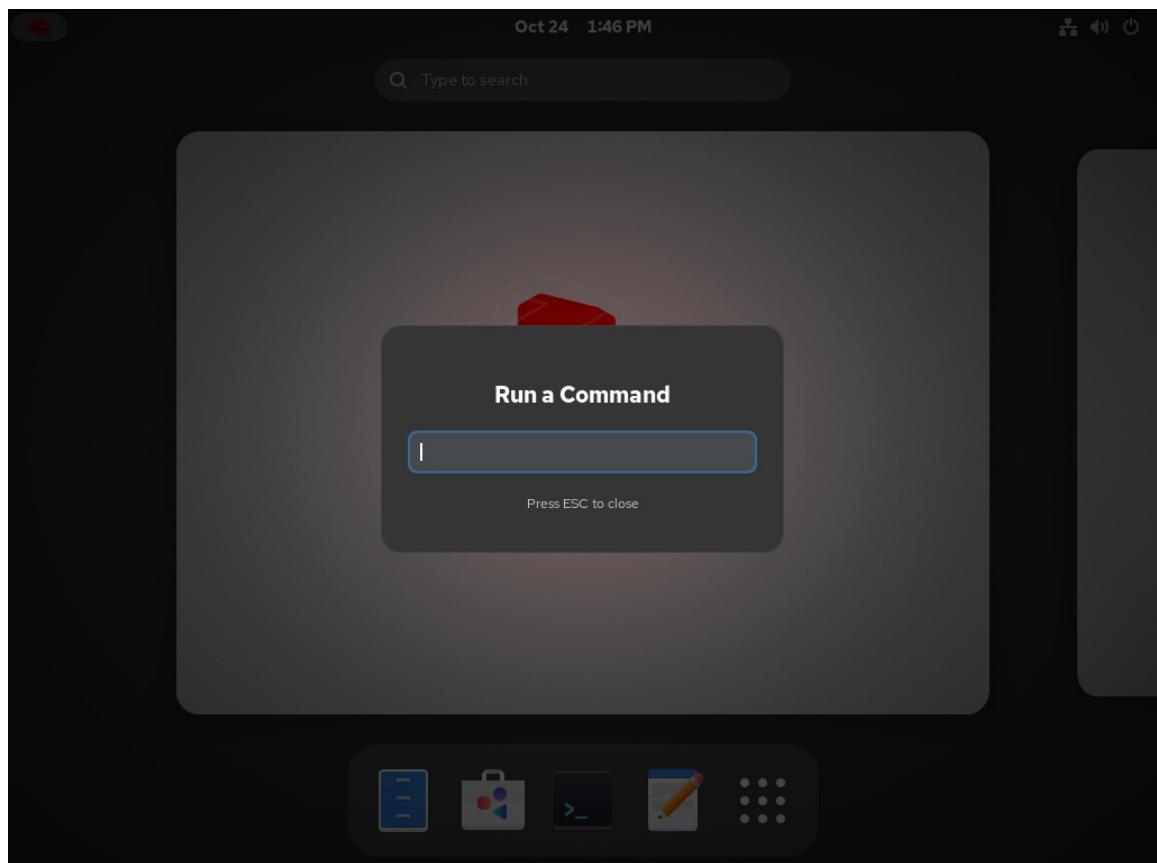
You can launch a graphical application in GNOME by entering a command.

Prerequisites

- You know the command that starts the application.

Procedure

1. Open a command prompt by using either of the following ways:
 - Open a terminal.
 - Press the **Alt+F2** shortcut to open the **Run a Command** screen.



2. Type the application command in the command prompt.
3. Confirm the command by pressing **Enter**.

CHAPTER 4. CONFIGURING APPLICATIONS TO START AUTOMATICALLY ON LOGIN

In the GNOME desktop environment, you can configure applications to launch automatically after you log into your GNOME desktop session.

Prerequisites

- The application is installed on the system.

Procedure

1. Find the **.desktop** file for the application, for example, in **/usr/share/applications**.
2. Copy the **.desktop** file to the **~/.config/autostart** directory. If the directory does not exist, create it.



NOTE

You can stop an application from launching automatically by deleting the application's **.desktop** file from the **~/.config/autostart** directory.

Verification

- Log out and log back in. Verify that the application starts.

CHAPTER 5. SEARCHING FOR FILES IN GNOME

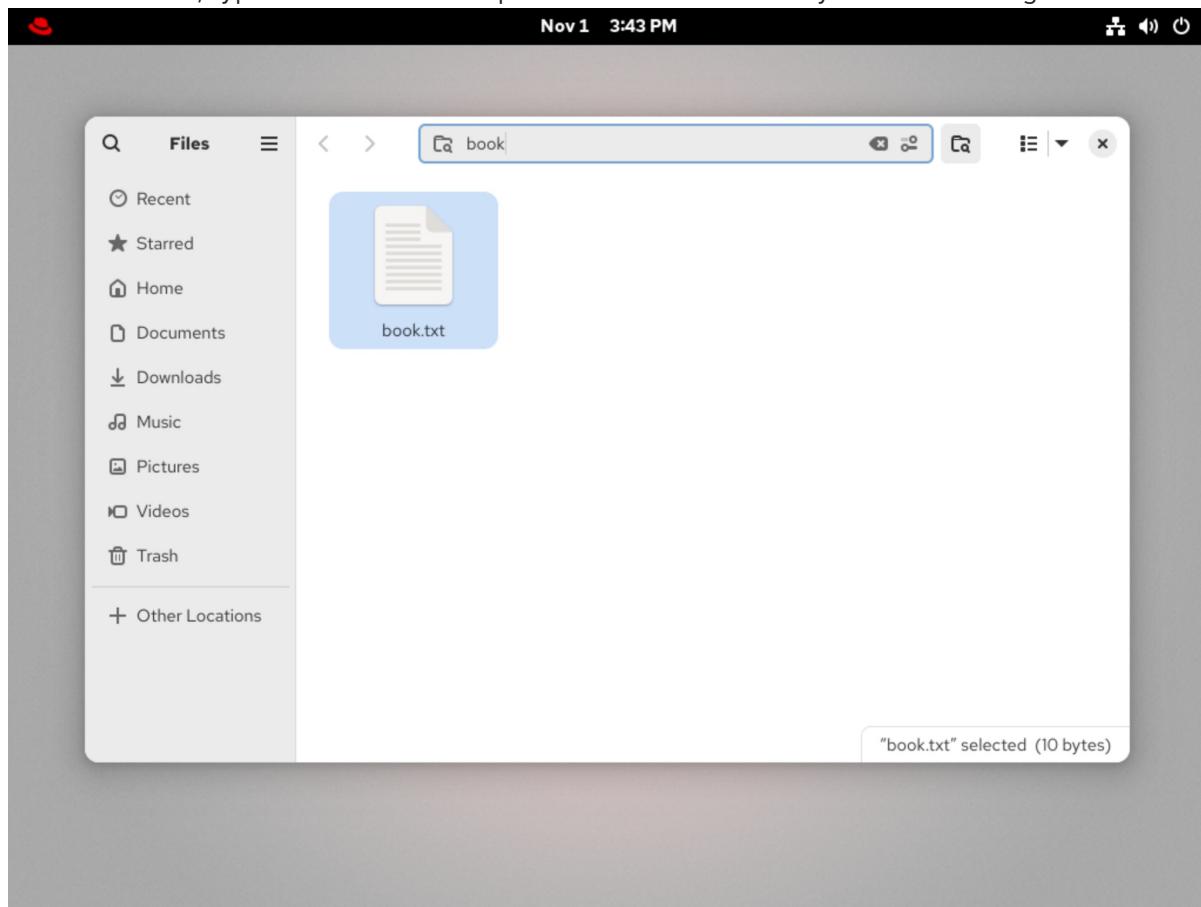
As a user in the GNOME environment, you can search for files by using the **Files** application.

5.1. PERFORMING A BASIC FILE SEARCH

You can search for files in your home directory and all folders inside of it based on a file name.

Procedure

1. Open the **Files** application.
2. Press the **Search** button.
3. In the text field, type the file name or a part of the file name that you are searching for.



4. The window now lists all files in your home directory that match the file name.

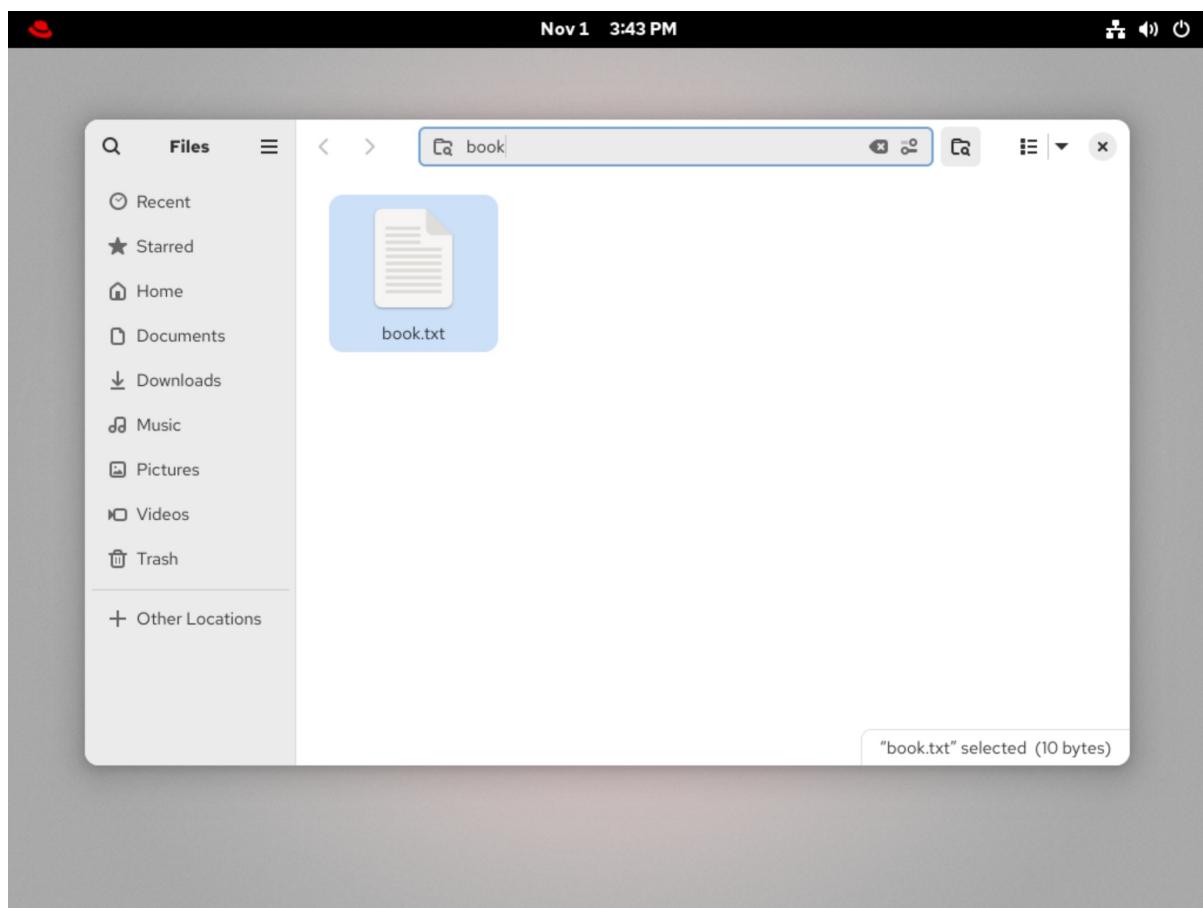
5.2. PERFORMING AN ADVANCED FILE SEARCH

You can search for files in a specific location, based on a file name, a time of access, a time of modification, or a file type.

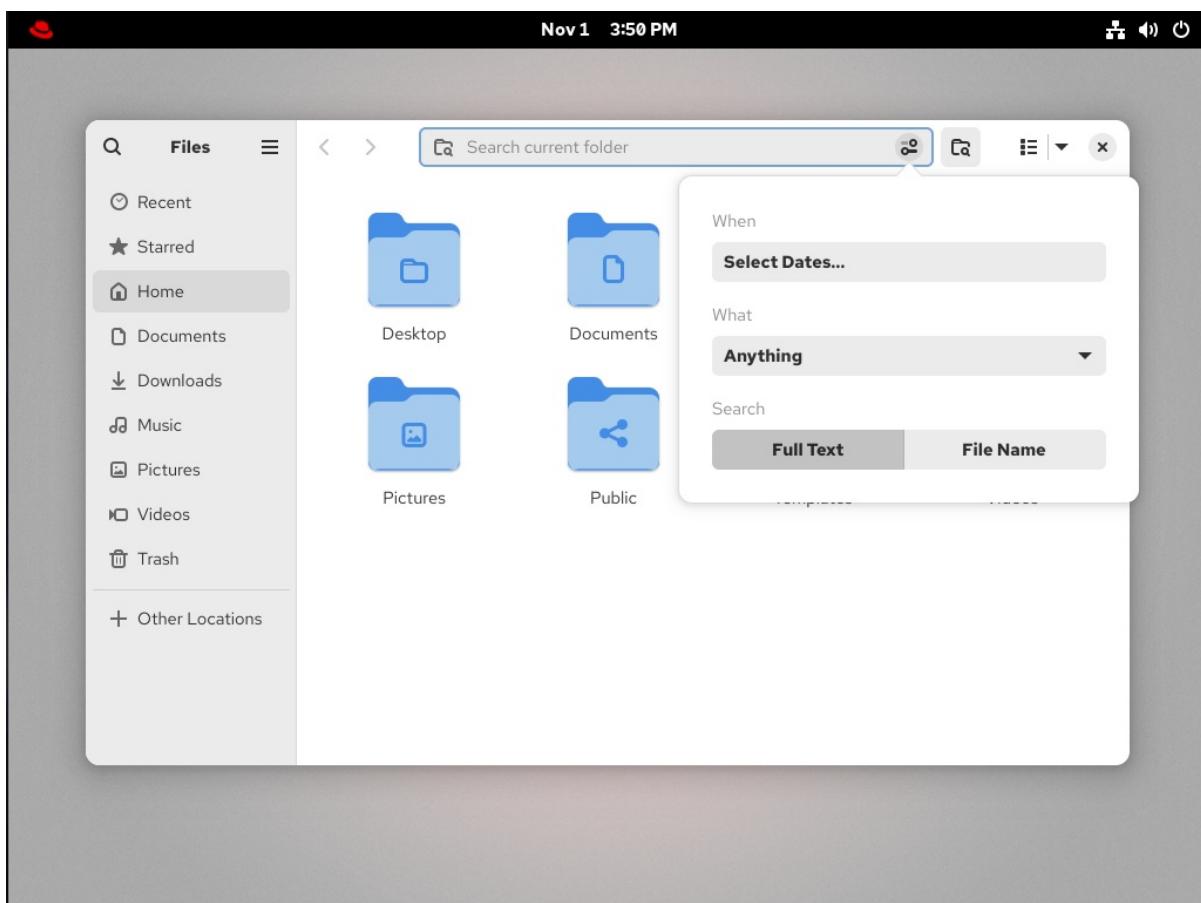
Procedure

1. Open the **Files** application.
2. Navigate to the folder where you want to search for a file.
The search recursively descends into all folders contained in this location.

3. Press the **Search** button.
4. Optional: Type the file name or a part of the file name that you are searching for in the text field. If you do not provide a file name, the search lists all files that match the other criteria, regardless of their file names.



5. Click the **Filter search results** button next to the text field. In this menu, you can select other search criteria.



6. To specify the access or modification time, click **Select dates** next to the **When** label. Enter a date or select a time point from the list.
Below the time list, you can switch between **Last modified** and **Last used**.
7. To specify the file type, click **Anything** next to the **What** label. Select a file type from the list.
8. To switch between a search based on file content or file names, use the **Full Text** and **File Name** buttons.



NOTE

The full-text search only works in indexed locations. You can configure the indexed locations in the **Search** section of the **Settings** application.

9. Click the triangle button next to the text field to hide the menu.
10. The window now lists all files in the specified directory that match your search criteria.

CHAPTER 6. BOOKMARKING FILES AND LOCATIONS

In GNOME, applications and dialogs that manage files list bookmarks in the left side bar. You can add, remove, and edit the bookmarks.

6.1. ADDING A BOOKMARK

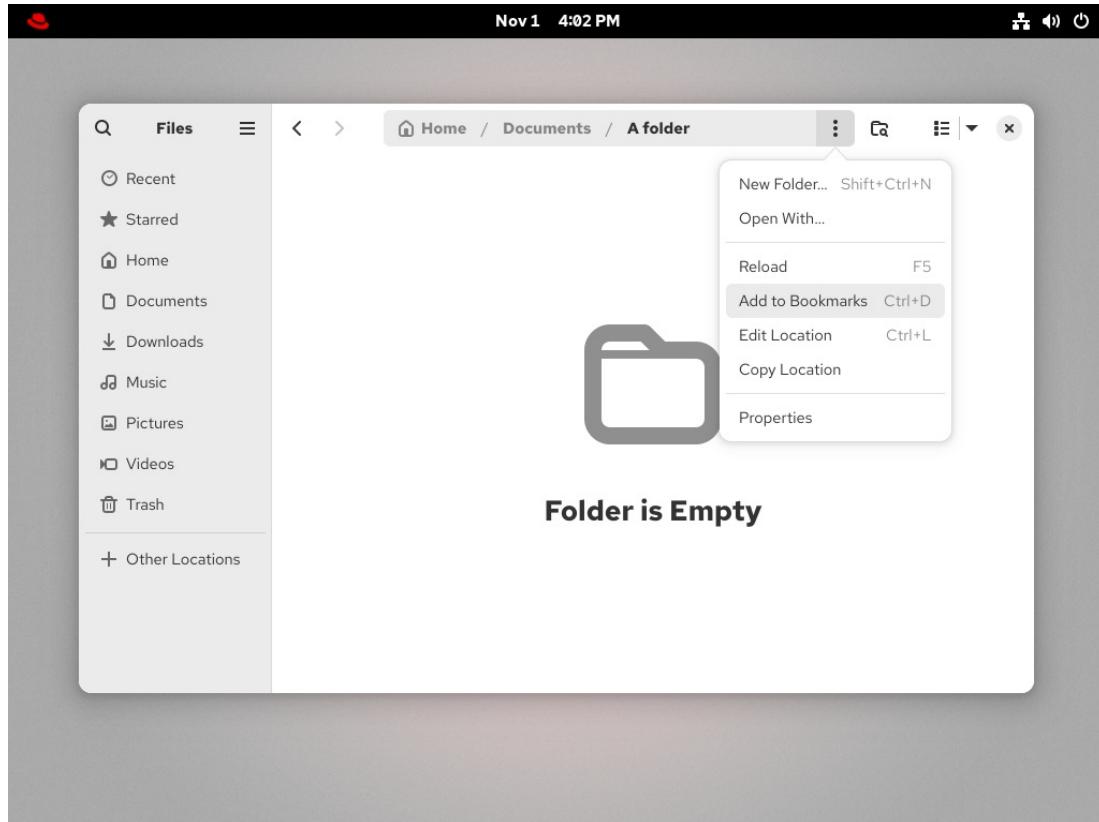
You can save a reference to a folder by bookmarking it in the **Files** application.

Prerequisites

- Locate the folder in the **Files** application.

Procedure

- Add the folder to bookmarks by using either of the following methods:
 - Dragging:
 - i. Drag the folder to the left side bar.
 - ii. Drop it over the **New bookmark** item.
 - Keyboard shortcut:
 - i. Open the folder.
 - ii. Press **Ctrl+D**.
 - Menu:
 - i. Open the folder.
 - ii. In the navigation bar at the top of the window, click the name of the folder.



- iii. Select **Add to Bookmarks**.

Verification

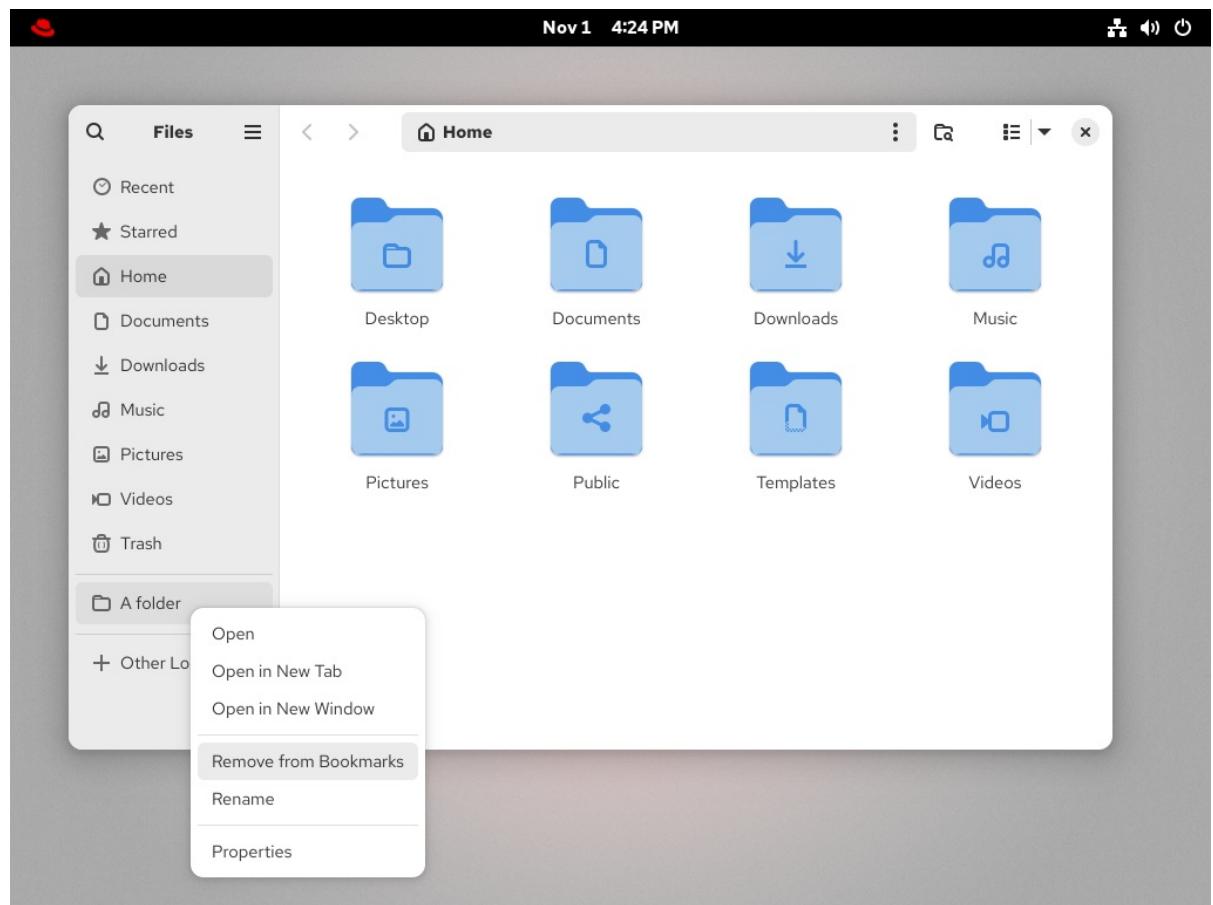
- Check that the bookmark now appears in the side bar.

6.2. REMOVING A BOOKMARK

You can delete an existing bookmark in the **Files** application.

Procedure

1. Right-click the bookmark in the side bar.
2. Select **Remove** from the menu.



Verification

- Check that the bookmark no longer appears in the side bar.

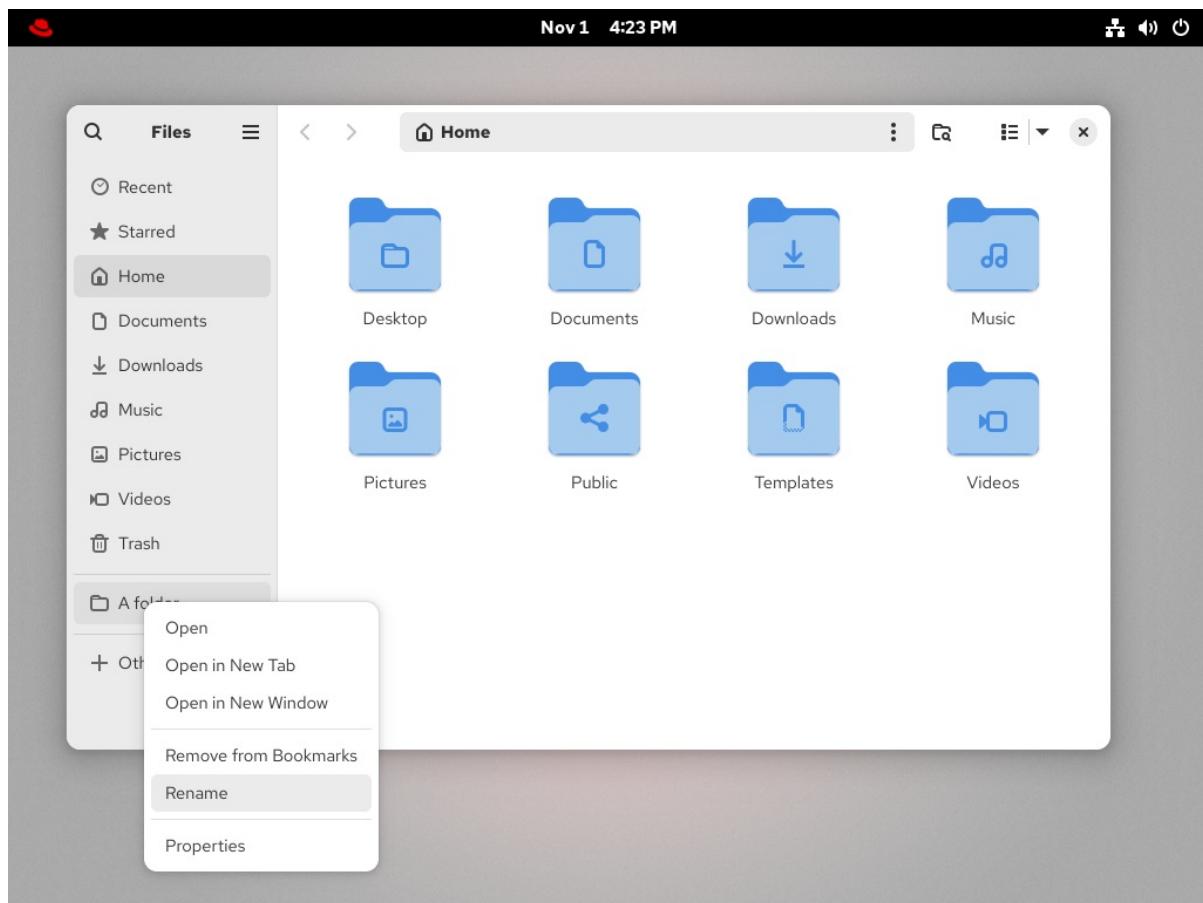
6.3. RENAMING A BOOKMARK

You can rename a bookmark to distinguish it from other bookmarks. If you have bookmarks to several folders that all share the same name, you can tell the bookmarks apart if you rename them.

Renaming the bookmark does not rename the folder.

Procedure

1. Right-click the bookmark in the side bar.
2. Select **Rename**.



3. In the **Name** field, enter the new name for the bookmark.
4. Click **Rename**.

Verification

- Check that the side bar lists the bookmark under the new name.

6.4. ADDING A BOOKMARK FOR ALL USERS

As a system administrator, you can set a bookmark for several users at once so that file shares are easily accessible to all the users.

Procedure

1. In the home directory of each existing user, edit the `~user/.config/gtk-3.0/bookmarks` file.
2. In the file, add a Uniform Resource Identifiers (URI) line that identifies the bookmark.
For example, the following lines add bookmarks to the `/usr/share/doc` directory and to the GNOME FTP network share:

```
file:///usr/share/doc/
ftp://ftp.gnome.org/
```

3. Optional: To also add the bookmarks for every newly created user on the system:
 - a. Create the `/etc/skel/.config/gtk-3.0/bookmarks` file.

-
- b. Enter the bookmark URI lines in the file.

CHAPTER 7. RECORDING YOUR SCREEN IN GNOME

You can record your desktop or specific application activities with GNOME Screen Recording, which is a built-in feature in the GNOME desktop environment. The recordings are saved as video files in the WebM format.

Procedure

1. Open GNOME Screen Recording in one of the following ways:
 - Pressing **PrtScr** and clicking the **Record Screen** button with the camera icon.
 - Typing **Take a screenshot** from the **Activities Overview** screen and clicking the **Record Screen** button with the camera icon.
 - Pressing the **Ctrl+Alt+Shift+R** keyboard shortcut.
2. Select whether to record the entire screen or an area by using the **Area Selection** or **Screen Selection** button.
3. If you want your pointer to be visible in the recording, click the **Show pointer** button with the cursor icon.
4. Start the recording by pressing the round **Capture** button or pressing **Space**.
After the recording begins, a red indicator appears in the upper-right corner of the screen. It shows the time of the recording.
5. To stop the recording, press the red indicator in the upper-right corner of the screen.
The indicator disappears, signaling the end of the recording.

The recorded video files are saved in the **~/Videos/Screencasts** directory. The file names of recorded videos start with **Screencast from** and include the date and time of the recording.

CHAPTER 8. CUSTOMIZING THE DESKTOP ENVIRONMENT

Customize the GNOME desktop environment in Red Hat Enterprise Linux 10 to personalize your individual workflow and visual preferences with an adaptable user interface.

8.1. CHANGING THE LANGUAGE BY USING DESKTOP GUI

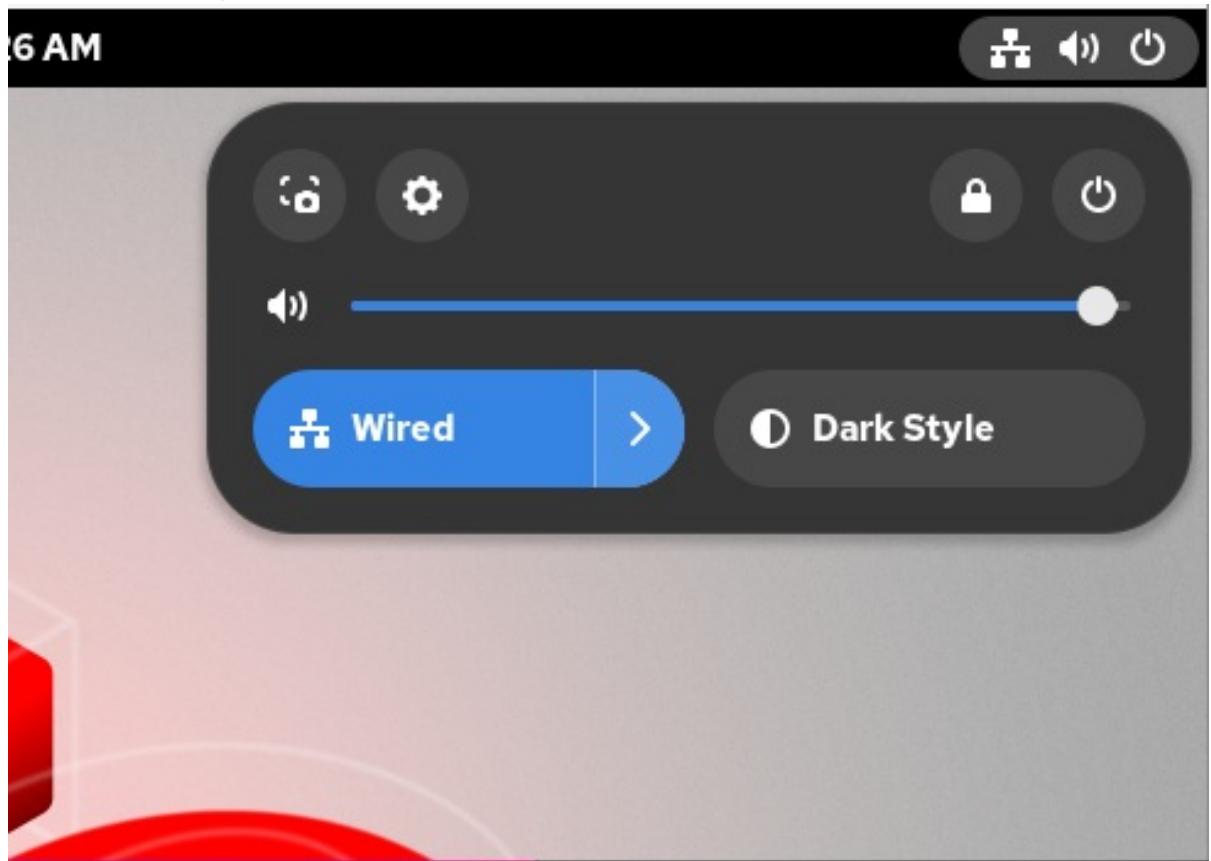
You can change the system language by using the desktop GUI.

Prerequisites

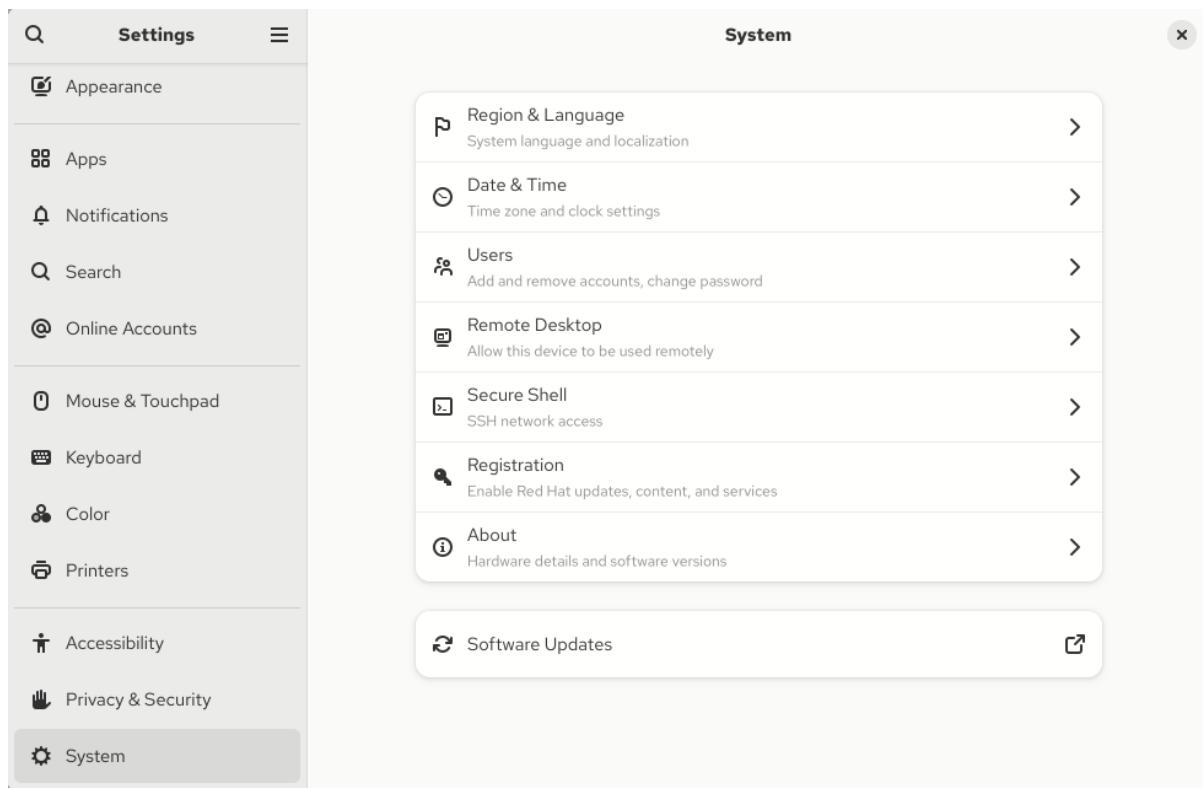
- Required language packages are installed on your system.

Procedure

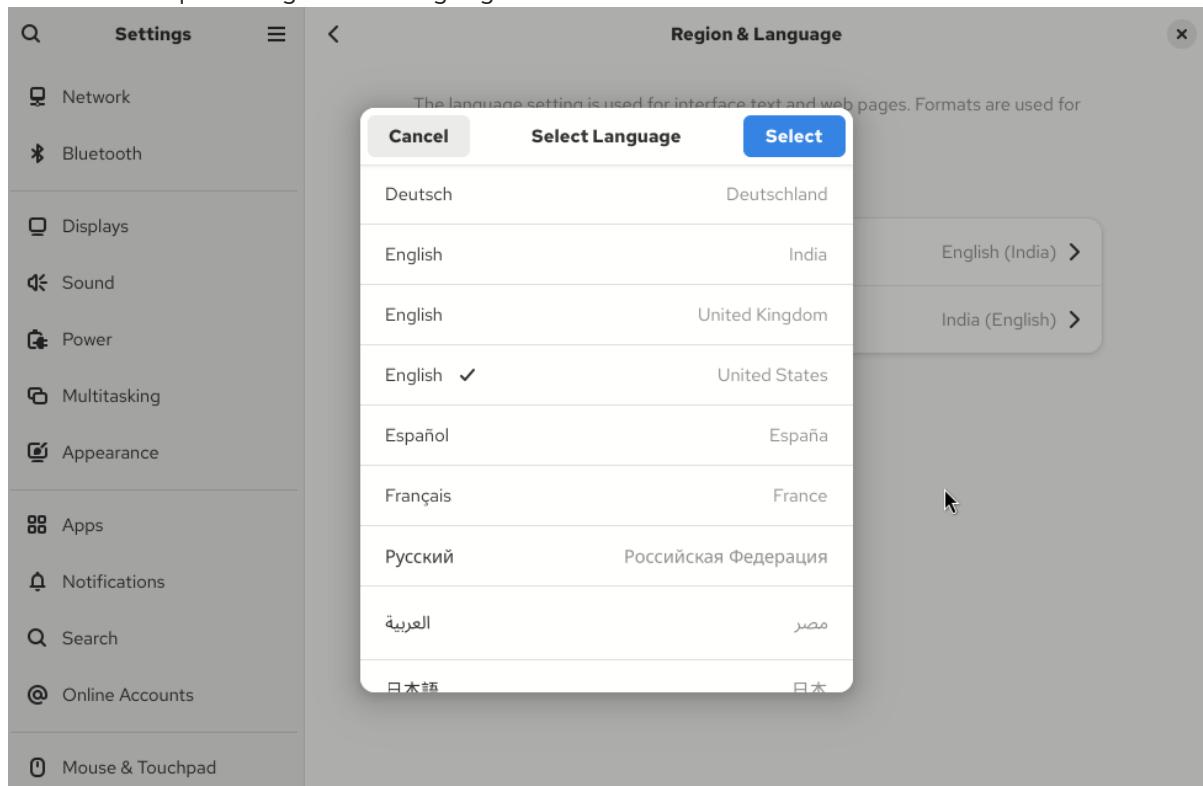
- Open the **Settings** application from the system menu by clicking on its icon.



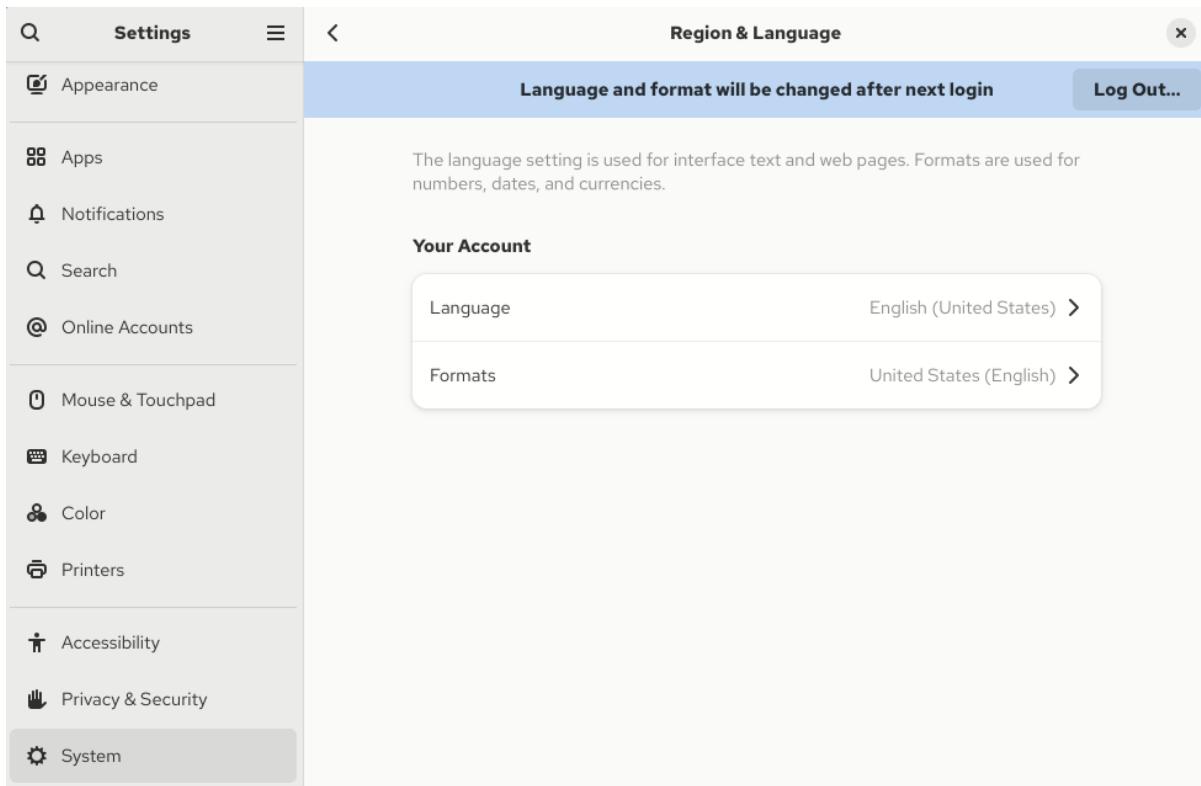
- In **Settings**, click **Region & Language** from the left vertical bar.
- Click **Language**.



4. Select the required region and language from the menu.



5. Click **Select**.
6. Click **Log Out...** for changes to take effect.



NOTE

Some applications do not support certain languages. The text of an application that cannot be translated into the selected language remains in US English.

Additional resources

- [Launching applications in GNOME](#)

8.2. ENABLING CHINESE, JAPANESE, OR KOREAN TEXT INPUT

If you write with Chinese, Japanese, or Korean characters, you can configure RHEL to input text in your language.

8.2.1. Input methods

Certain scripts, such as Chinese, Japanese, or Korean, require keyboard input to go through an Input Method Engine (IME) to enter native text.

An input method is a set of conversion rules between the text input and the selected script. An IME is a software that performs the input conversion specified by the input method.

To input text in these scripts, you must set up an IME. If you installed the system in your native language and selected your language at the **GNOME Initial Setup** screen, the input method for your language is enabled by default.

The following input method engines (IMEs) are available on RHEL from the listed packages:

Table 8.1. Available input method engines

Languages	Scripts	IME name	Package
Chinese	Simplified Chinese	Intelligent Pinyin	ibus-libpinyin
Chinese	Traditional Chinese	New Zhuyin	ibus-libzhuyin
Japanese	Kanji, Hiragana, Katakana	Anthy	ibus-anthy
Korean	Hangul	Hangul	ibus-hangul
Other	Various	M17N	ibus-m17n

8.2.2. Switching the input method in GNOME

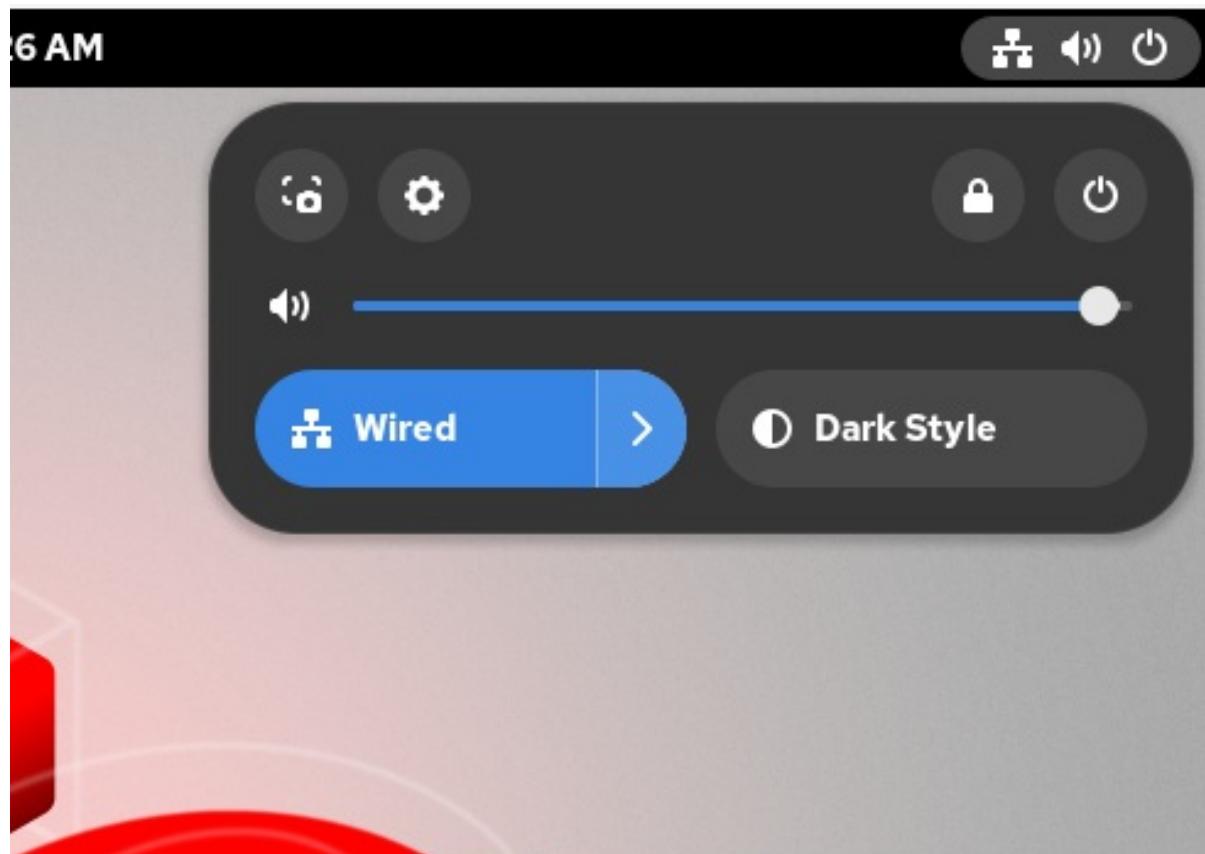
Before you can switch to a different script, for example, Chinese, Japanese, or Korean scripts, you must configure the input method.

Prerequisites

- The input method packages are installed. You can install all available input packages by entering the **dnf install @input-methods** command.

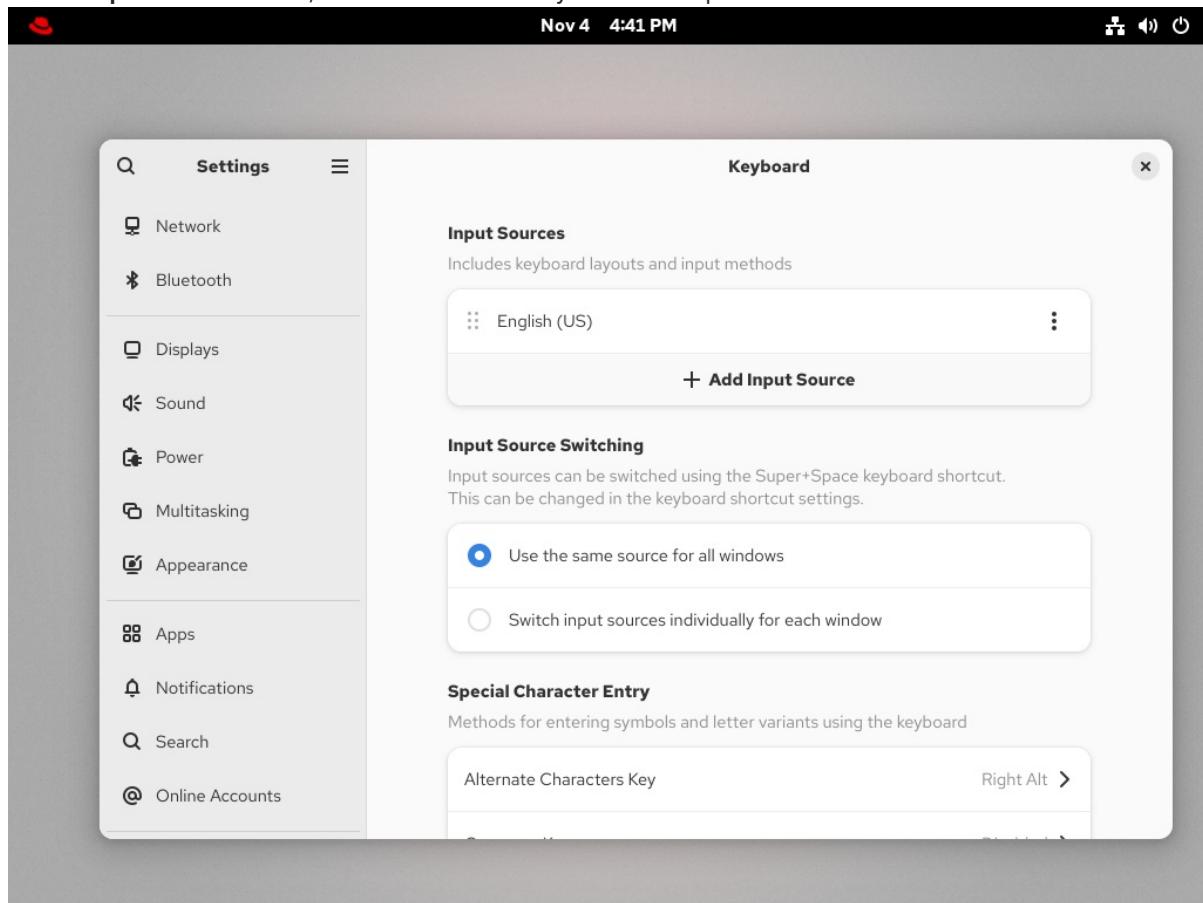
Procedure

- Click the settings () button on the right to display a settings menu.



- Select the **Keyboard** section.

3. In the **Input Sources** list, review the currently enabled input methods.



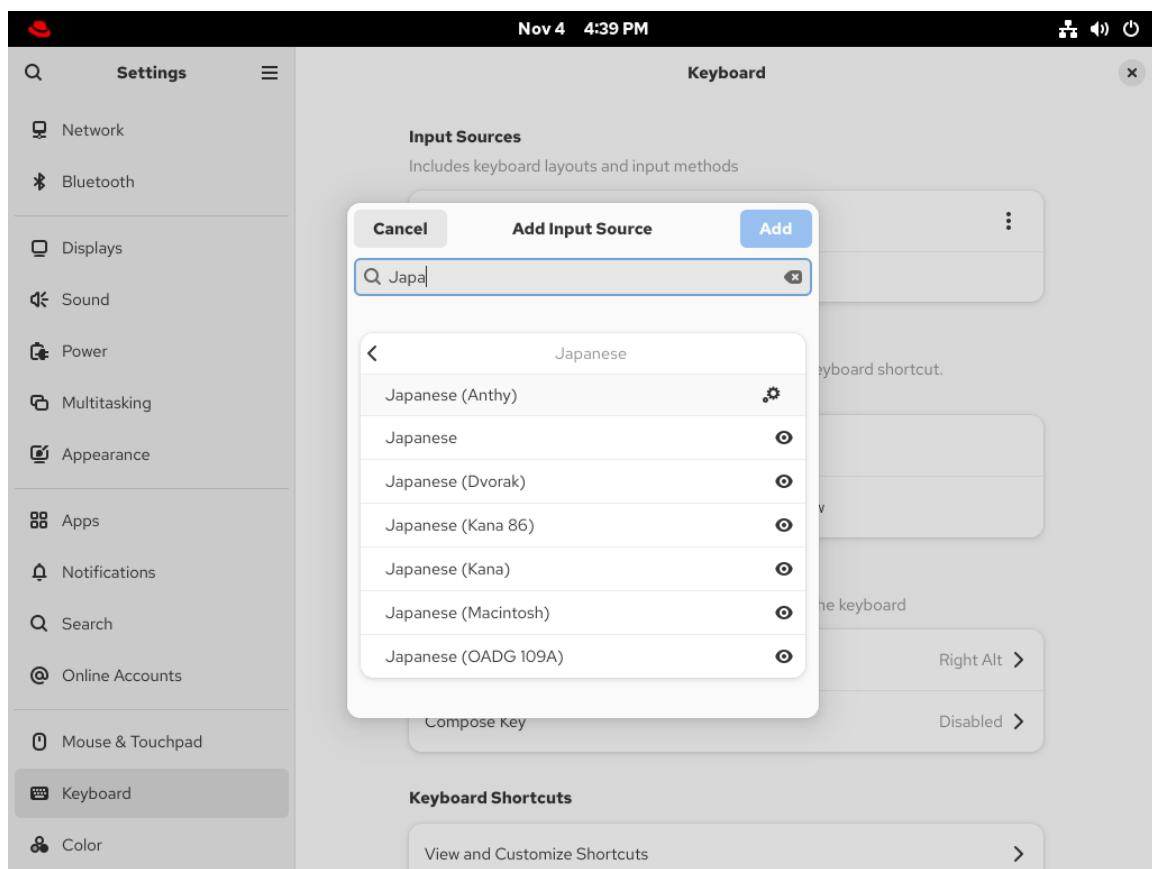
4. If your input method is missing, click the **Add Input Source** button under the **Input Sources** list and select your language.



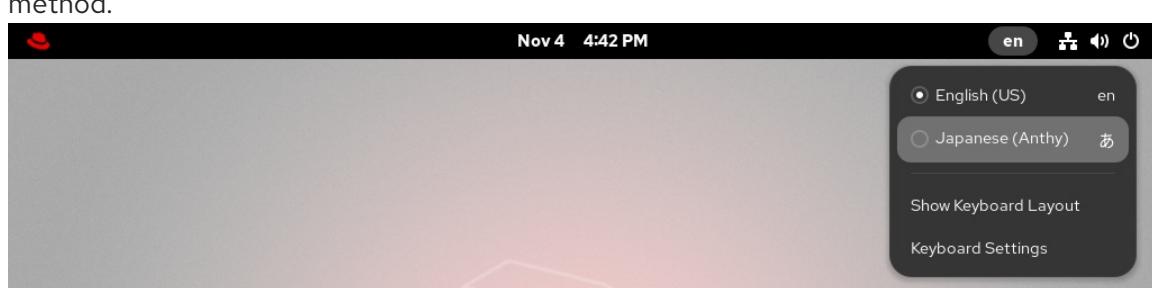
NOTE

If you cannot find your language in the menu, expand the selection by clicking **More (⋮)** at the end of the list.

- a. Select the input method that you want to use. A gear icon marks all input methods to distinguish them from simple keyboard layouts.



- b. Confirm your selection by clicking **Add**.
5. Switch the active input method in one of the following ways:
- Click the input method indicator on the right side of the top panel and select your input method.



- Switch between the enabled input methods by using the **Super+Space** keyboard shortcut.

Verification

- Open a text editor.
- Type text in your language.
- Verify that the text appears in your native script.

8.2.3. Additional resources

- [Installing a font for the Chinese standard GB 18030 character set](#) (Red Hat Knowledgebase)

8.3. ENABLING DESKTOP ICONS

You can enable the desktop icons functionality and move files to the desktop.

8.3.1. Desktop icons

Desktop icons are provided by the **Desktop icons** GNOME Shell extension, which is available from the **gnome-shell-extension-desktop-icons** package.

Desktop icons in GNOME Classic

The GNOME Classic environment includes the **gnome-shell-extension-desktop-icons** package by default. Desktop icons are always on, and you cannot turn them off.

Desktop icons in GNOME Standard

In GNOME Standard, desktop icons are disabled by default.

To enable desktop icons in the GNOME Standard environment, you must install the **gnome-shell-extension-desktop-icons** package.

8.3.2. Enabling desktop icons in GNOME Standard

This procedure enables the desktop icons functionality in the GNOME Standard environment.

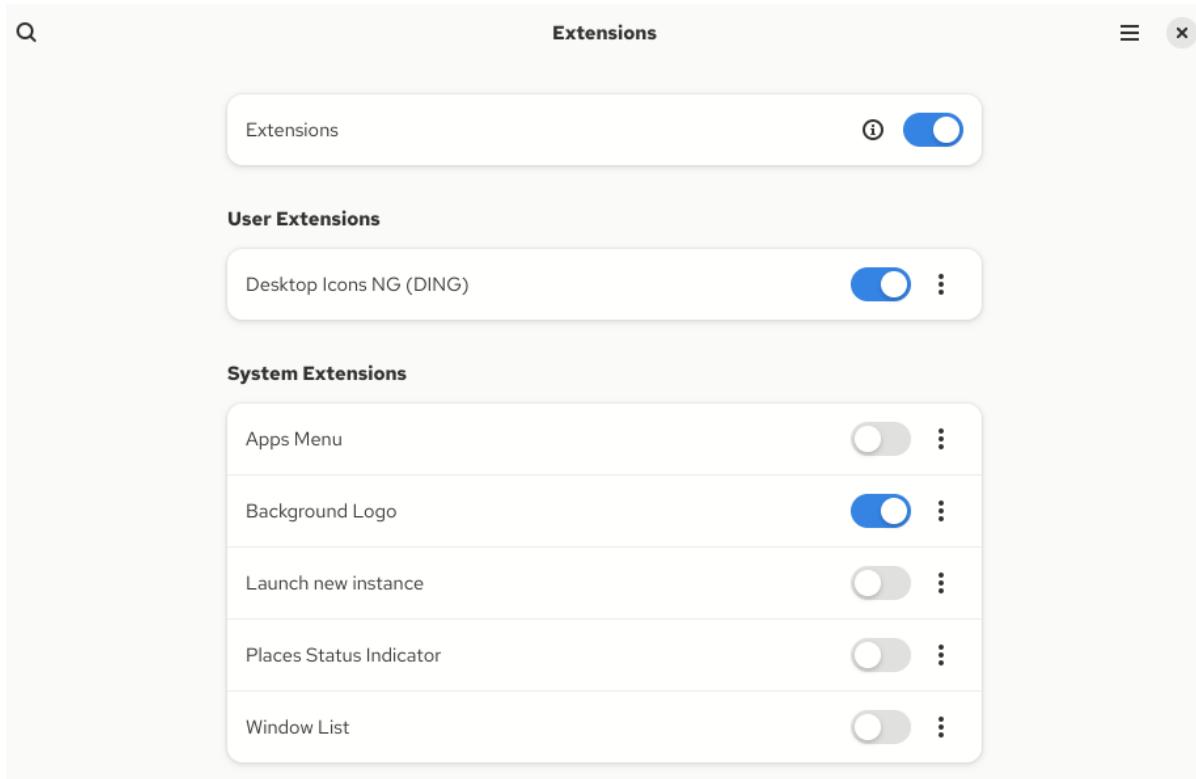
Prerequisites

- The **Extensions** application is installed on the system:

```
# dnf install gnome-shell-extension-desktop-icons
```

Procedure

1. Open the **Extensions** application.
2. Enable the **Desktop Icons** extension.



8.3.3. Creating a desktop icon for a file

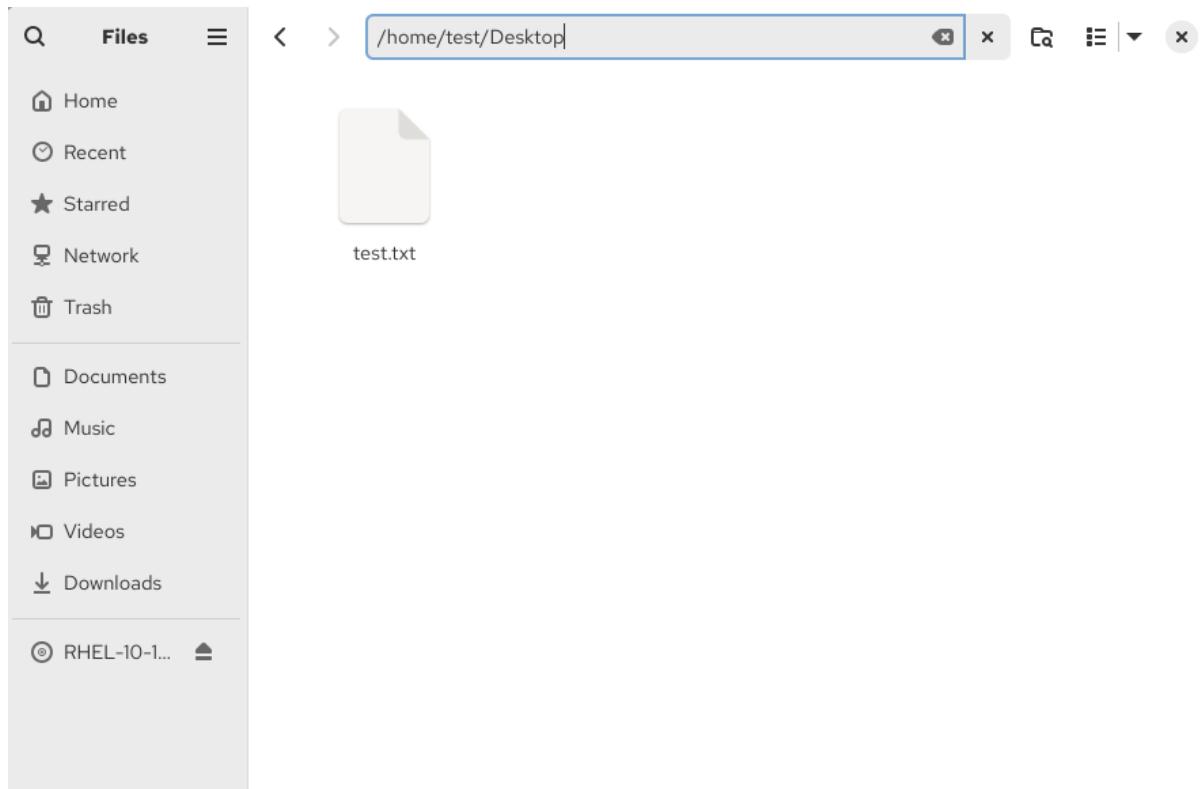
Creating a desktop icon for a file provides a quick and convenient shortcut to access that file directly from your desktop. Instead of navigating through folders, you can open the file directly, saving you time and streamlining your workflow.

Prerequisites

- The **Desktop icons** extension is enabled.

Procedure

- Move the selected file into the `~/Desktop/` directory.



Verification

- Verify the icon for the file is displayed on the desktop.

8.4. USING SPECIAL CHARACTERS IN GNOME

In GNOME, you can use the compose key to type special characters from different languages and symbol sets, including those not available on your keyboard. You can enter and view special characters from different languages and symbol sets, making it easy to work with diverse character sets in GNOME.

To input these special characters, you can define one of the existing keys on your keyboard as a compose key. Once enabled, the compose key allows you to type special characters and symbols by pressing multiple keys in a specific sequence.

8.4.1. Enabling the compose key for an individual user

You can enable the compose key from the Settings menu while logged in as the user.

Procedure

- Click on the **Activities** button in the upper-left corner of the screen.
- Type **Settings** and click on the **Settings** icon to open the Settings application.
- In the Settings window, click on **Keyboard** in the left sidebar.
- Scroll down and select the **Compose Key** option.
- Toggle the slider to enable the **Compose Key**.
- Select the key you want to use as the compose key.

- Once you have selected the compose key, close the Settings window.

The compose key is now enabled, and you can use it to input special characters and symbols by pressing the compose key, followed by the corresponding sequence of keys.

To see available multi-key sequences for composing special characters, use:

```
$ grep "<Multi_key>" /usr/share/X11/locale/en_US.UTF-8/Compose
```

Verification

- Press the compose key, then type the sequence of keys for the special character you want to input. For example, to type ©, press the **compose key**, then press **o** and **c**.

8.4.2. Enabling the compose key for another user

You can enable the compose key for another user with the **gsettings** utility.

Prerequisites

- Administrative access.

Procedure

- Allow all clients to connect to the X server:

```
# xhost +
```

- Run the following command to set the compose key:

```
# su - <username> -c "gsettings set org.gnome.desktop.input-sources xkb-options \"['compose:<compose_key>']\""
```

Replace **<username>** with the username of the user for whom you want to enable the compose key. Replace **<compose_key>** with the key you want to use as the compose key. You can use the **ralt** option to select the right **Alt** key as the compose key.

To see other compose key options that you can use to set up a compose key on your keyboard, use:

```
$ grep compose /usr/share/X11/xkb/rules/evdev.lst
```

- Resets the access control:

```
# xhost -
```

Verification

- To check the compose key settings for another user, use:

```
# su - <username> -c "gsettings get org.gnome.desktop.input-sources xkb-options"
```

Replace **<username>** with the username of the user for whom you want to check the compose key setting.

8.4.3. Enabling the compose key for all users

You can enable the compose key for all users by creating a **dconf** configuration file.

Prerequisites

- Administrative access.

Procedure

1. Create the **/etc/dconf/db/local.d/00-compose-key** configuration file with the following content:

```
[org/gnome/desktop/input-sources]
xkb-options=['compose:<compose_key>']
```

Replace **<compose_key>** with the key you want to use as the compose key. You can use the **ralt** option to select the right **Alt** key as the compose key.

To see other compose key options that you can use to set up a compose key on your keyboard, use:

```
$ grep compose /usr/share/X11/xkb/rules/evdev.lst
```

2. Update the **dconf** database with the new configuration:

```
# dconf update
```

3. Restart your system or log out and log back in to your GNOME session for the changes to take effect.

The compose key is now enabled for all users on the system and they can use it to input special characters and symbols by pressing the compose key, followed by the corresponding sequence of keys.

Verification

- Press the compose key, then type the sequence of keys for the special character you want to input. For example, to type ©, press the **compose key**, then press **o** and **c**.

8.4.4. Compose key sequences for special characters

The table showcases compose key sequences used to input special characters with diacritics or accents in GNOME. Each row displays a compose key sequence alongside its corresponding result

Table 8.2. Compose key sequences for special characters

Compose key sequence	Result
Compose+'+letter	Letter with acute accent (é, á, ñ)

Compose key sequence	Result
Compose`+letter	Letter with grave accent (è, û, ò)
Compose"++letter	Letter with umlaut or diaeresis (ë, ö, ü)
Compose+-+letter	Letter with macron (ā, ē, ō)
Compose+/-+letter	Letter with stroke or diacritic (ø, Ł, Ø)
Compose+=+letter	Letter with double acute accent (ő, ū, ã)
Compose+.+letter	Letter with dot above (à, ç, ð)
Compose+,+letter	Letter with cedilla (ç, ş, ñ)
Compose+^+letter	Letter with circumflex accent (â, ê, î)
Compose+~+letter	Letter with tilde accent (ã, ñ, õ)

CHAPTER 9. ENABLING ACCESSIBILITY FOR VISUALLY IMPAIRED USERS

As a system administrator, you can configure the desktop environment to support users with a visual impairment.

9.1. COMPONENTS THAT PROVIDE ACCESSIBILITY FEATURES

On the RHEL 10 desktop, the **Orca** screen reader ensures accessibility for users with a visual impairment. **Orca** is included in the default RHEL installation.

Orca reads information from the screen and communicates it to you using the following components:

Speech Dispatcher

Orca uses **Speech Dispatcher** to communicate with the speech synthesizer. **Speech Dispatcher** supports various speech synthesis backends, ensures that messages from other applications do not interrupt the messages from **Orca**, and provides other functionality.

Speech synthesizer

Provides a speech output. The default speech synthesizer is **eSpeak-NG**.

Braille display

Provides a tactile output. The **BRLTTY** service enables this functionality.

Additional resources

- [Orca help page](#)

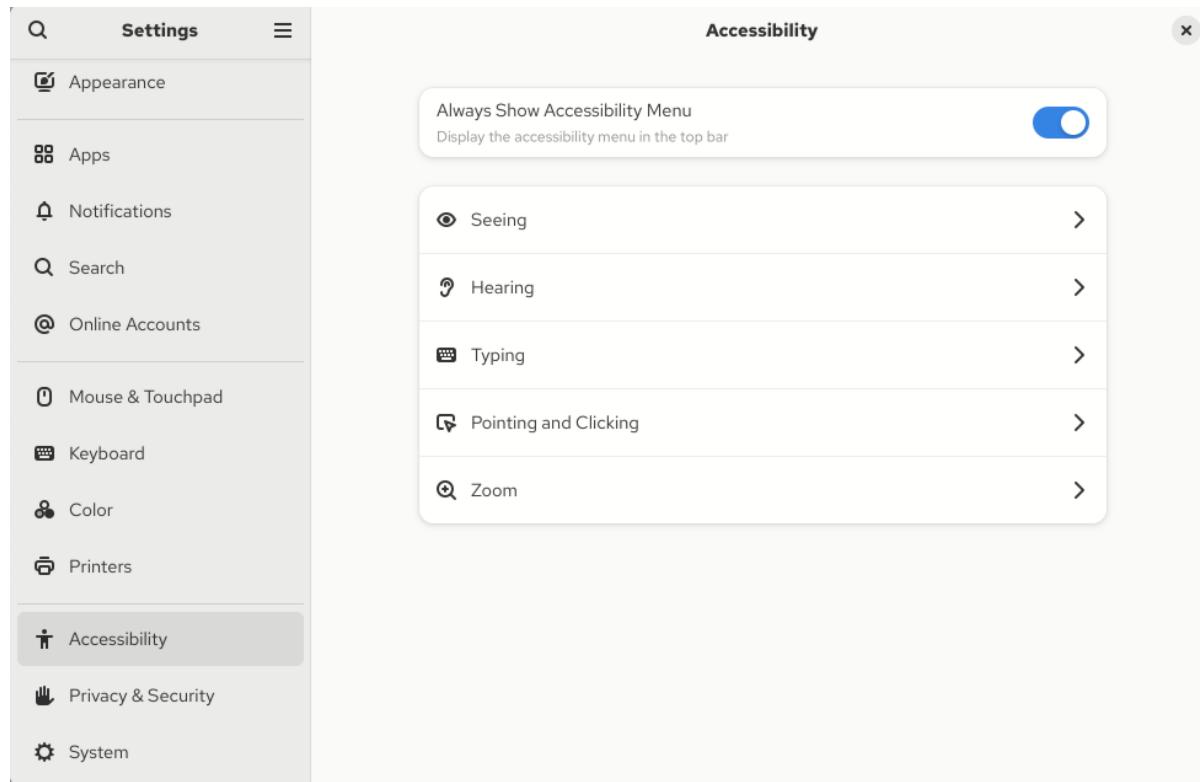
9.2. ENABLING THE ACCESSIBILITY MENU

You can enable the **Accessibility menu** icon in the top panel, which provides a menu with several accessibility options.

Procedure

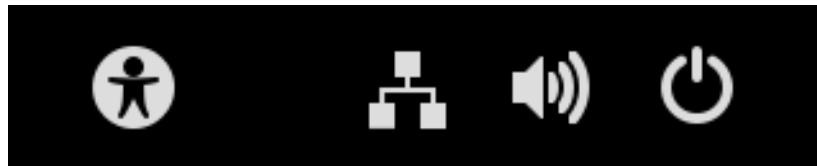
1. Open the **Settings** application.
2. Select **Accessibility**.
3. Enable the **Always Show Accessibility Menu** item.

Enabling the Accessibility menu in Settings



Verification

- Check that the **Accessibility** menu icon is displayed on the top bar even when all options from this menu are switched off.



9.3. ENABLING THE SCREEN READER

You can enable the **Orca** screen reader in your desktop environment. The screen reader then reads the text displayed on the screen to improve accessibility.

Procedure

- Enable the screen reader using either of the following ways:
 - Press the **Super+Alt+S** keyboard shortcut.
 - If the top panel shows the **Universal Access** menu, select **Screen Reader** in the menu.

Verification

- Open an application with text content.
- Check that the screen reader reads the text in the application.

9.4. ENABLING A BRAILLE DISPLAY DEVICE

The Braille display is a device that uses the **brlty** service to provide tactile output for visually impaired users.

In order for the Braille display to work correctly, perform the following procedures.

9.4.1. Supported types of Braille display device

The following types of Braille display devices are supported on RHEL 10.

Table 9.1. Braille display device types and the corresponding syntax

Braille device type	Syntax of the type	Note
Serial device	serial:path	Relative paths are at /dev .
USB device	[serial-number]	The brackets ([]) here indicate optionality.
Bluetooth device	bluetooth:address	

9.4.2. Enabling the brlty service

To enable the Braille display, enable the **brlty** service to start automatically on boot. By default, **brlty** is disabled.

Prerequisites

- Ensure that the **brlty** package is installed:

```
# dnf install brlty
```

- Optionally, you can install speech synthesis support for **brlty**:

```
# dnf install brlty-espeak-ng
```

Procedure

- Enable the **brlty** service to start on boot:

```
# systemctl enable --now brlty
```

Verification

1. Reboot the system.
2. Check that the **brlty** service is running:

```
# systemctl status brlty
● brlty.service - Braille display driver for Linux/Unix
   Loaded: loaded (/usr/lib/systemd/system/brlty.service; enabled; vendor pres>
   Active: active (running) since Tue 2019-09-10 14:13:02 CEST; 39s ago
```

```
Process: 905 ExecStart=/usr/bin/brltty (code=exited, status=0/SUCCESS)
Main PID: 914 (brltty)
Tasks: 3 (limit: 11360)
Memory: 4.6M
CGroup: /system.slice/brltty.service
└─914 /usr/bin/brltty
```

9.4.3. Authorizing users of a Braille display device

To use a Braille display device, you must set the users who are authorized to use the Braille display device.

Procedure

1. In the **/etc/brltty.conf** file, ensure that **keyfile** is set to **/etc/brlapi.key**:

```
api-parameters Auth=keyfile:/etc/brlapi.key
```

This is the default value. Your organization might have overridden it.

2. Authorize the selected users by adding them to the **brlapi** group:

```
# usermod --append -G brlapi user-name
```

9.4.4. Setting the driver for a Braille display device

The **brltty** service automatically chooses a driver for your Braille display device. If the automatic detection fails or takes too long, you can set the driver manually.

Prerequisites

- The automatic driver detection has failed or takes too long.

Procedure

1. Open the **/etc/brltty.conf** configuration file.
2. Find the **braille-driver** directive, which specifies the driver for your Braille display device.
3. Specify the identification code of the required driver in the **braille-driver** directive.
Choose the identification code of required driver from the list provided in **/etc/brltty.conf**. For example, to use the XWindow driver:

```
# XWindow
braille-driver xw
```

To set multiple drivers, list them separated by commas. Automatic detection then chooses from the listed drivers.

9.4.5. Connecting a Braille display device

The **brltty** service automatically connects to your Braille display device. If the automatic detection fails, you can set the connection method manually.

Prerequisites

- The Braille display device is physically connected to your system.
- The automatic connection has failed.

Procedure

1. If the device is connected by a serial-to-USB adapter, find the actual device name in the kernel messages on the device plug:

```
# journalctl --dmesg | fgrep ttyUSB
```

2. Open the **/etc/brltty.conf** configuration file.

3. Find the **braille-device** directive.

4. In the **braille-device** directive, specify the connection.

You can also set multiple devices, separated by commas, and each of them will be probed in turn.

For example:

Example 9.1. Settings for the first serial device

```
braille-device serial:ttyS0
```

Example 9.2. Settings for the first USB device matching Braille driver

```
braille-device usb:
```

Example 9.3. Settings for a specific USB device by serial number

```
braille-device usb:nnnnn
```

Example 9.4. Settings for a serial-to-USB adapter

Use the device name that you found earlier in the kernel messages:

```
braille-device serial:ttyUSB0
```



NOTE

Setting **braille-device** to **usb:** does not work for a serial-to-USB adapter.

Example 9.5. Settings for a specific Bluetooth device by address

braille-device bluetooth:xx:xx:xx:xx:xx:xx

9.4.6. Setting the text table

The **brlty** service automatically selects a text table based on your system language. If your system language does not match the language of a document that you want to read, you can set the text table manually.

Procedure

1. Edit the **/etc/brlty.conf** file.
2. Identify the code of your selected text table.
You can find all available text tables in the **/etc/brlty/Text/** directory. The code is the file name of the text table without its file suffix.
3. Specify the code of the selected text table in the **text-table** directive.
For example, to use the text table for American English:

text-table en_US # English (United States)

9.4.7. Setting the contraction table

You can select table to encode the abbreviations with a Braille display device. Relative paths to particular contraction tables are stored within the **/etc/brlty/Contraction/** directory.



WARNING

If no table is specified, the **brlty** service does not use a contraction table.

Procedure

- Choose a contraction table from the list in the **/etc/brlty.conf** file.
For example, to use the contraction table for American English, grade 2:

contraction-table en-us-g2 # English (US, grade 2)

CHAPTER 10. BROWSING FILES ON A NETWORK SHARE

You can connect to a network share provided by a server and browse the files on the server like local files. You can download or upload files by using the file browser.

10.1. GVFS URI FORMAT FOR NETWORK SHARES

GNOME uses the GVFS URI format to refer to network shares and files on them. When you connect to a network share from GNOME, you provide the address to the network share in the following format:

`<protocol>://<user_name>@<domain_name>:<port>/<folder>/<file>`

Where:

- **<protocol>** specifies the connection type, such as **ssh** for the SSH protocol.
- **<user_name>** specifies the user name. Some protocols do not require user names.
- **<domain.name>** is the address of the server, such as **server.example.com**.
- **<port>** specifies the port number. Some connections do not require specifying a port number.

GVFS URI examples for common network share protocols

- **ssh://user@server.example.com/path**
- **smb://server/share**
- **dav://example.server.com/path**
- **ftp://ftp.example.com/path**

Additional resources

- [The GVFS system](#)
- [The format of the GVFS URI string](#)

10.2. MOUNTING A STORAGE VOLUME IN GNOME

You can manually mount a local storage volume or a network share in the **Files** application.

Procedure

1. Open the **Files** application.
2. Click **Other Locations** in the side bar.

The window lists all connected storage volumes and all network shares that are publicly available on your local area network.

If you can see the volume or network share in this list, mount it by clicking the item.

If you want to connect to a different network share, use the following steps.

3. Enter the GVFS URI string to the network share in the **Enter server address** field.
4. Press **Connect**.
5. If the dialog asks you for login credentials, enter your name and password into the relevant fields.
6. When the mounting process finishes, you can browse the files on the volume or network share.

10.3. UNMOUNTING A STORAGE VOLUME IN GNOME

You can unmount a storage volume, a network share, or another resource in the **Files** application.



WARNING

Always unmount a storage volume before removing the drive from the computer. Removing a drive might corrupt the data on the volumes that are still mounted.

Procedure

1. Open the **Files** application.
2. In the side bar, click the **Unmount** () icon next to the chosen mount.
3. Wait until the mount disappears from the side bar or a notification about the safe removal appears.

10.4. ADDITIONAL RESOURCES

- [Managing storage volumes in GNOME](#)
- [Configuring GNOME to store user settings on home directories hosted on an NFS share](#)
- [Mounting an SMB Share](#)

CHAPTER 11. CONFIGURING FILE ASSOCIATIONS

You can configure RHEL to open or access files with different formats.

In GNOME, MIME (Multipurpose Internet Mail Extension) types help to identify the format of a file and applications to use to open these files.

11.1. MULTIPURPOSE INTERNET MAIL EXTENSION TYPES

The GNOME desktop uses MIME types to:

- Determine which application should open a specific file format by default
- Register other applications that can open files of a specific format
- Set a string describing the type of a file, for example, in a file properties dialog of the files application
- Set an icon representing a specific file format, for example, in a file properties dialog of the files application

MIME type names follow a given format:

media-type/subtype-identifier



NOTE

In the **image/jpeg** MIME type name, **image** is a media type and **jpeg** is the subtype identifier.

GNOME follows Multipurpose Internet Mail Extension (MIME) info specification from the [Freedesktop.org](#) project to determine the following information:

- The machine-wide and user-specific location to store all the MIME type specification files
- How to register a MIME type so that the desktop environment knows which application you can use to open a specific file format
- How users can change which applications should open with what file formats

MIME database

The MIME database is a collection of all the MIME type specification files that GNOME uses to store information about known MIME types.

The most important part of the MIME database from the system administrator's point of view is the **/usr/share/mime/packages** directory, where the MIME type-related files specifying information about known MIME types are stored. One example of such a file is **/usr/share/mime/packages/freedesktop.org.xml**, specifying information about the standard MIME types available on the system, by default. The shared-mime-info package provides this file.

Additional resources

- For detailed information describing the MIME type system, see Shared MIME Info specifications on the [Freedesktop website](#).

11.2. ADDING A CUSTOM MIME TYPE FOR ALL USERS

You can add a custom MIME type for all the users on the system and register a default application for that MIME type.

Procedure

1. Create the `/usr/share/mime/packages/application-x-newtype.xml` file with following content:

```
<?xml version="1.0" encoding="UTF-8"?>

<mime-info xmlns="http://www.freedesktop.org/standards/shared-mime-info">
  <mime-type type="application/x-newtype">
    <comment>new mime type</comment>
    <glob pattern="*.xyz"/>
  </mime-type>
</mime-info>
```

The sample **application-x-newtype.xml** file here defines a new MIME type **application/x-newtype** and assigns file names with the **.xyz** extension to that MIME type.

2. Create a new **.desktop** file named, for example, **myapplication1.desktop** in the `/usr/share/applications/` with following content:

```
[Desktop Entry]
Type=Application
MimeType=application/x-newtype
Name=My Application 1
Exec=myapplication1 field_code
```

The sample **myapplication1.desktop** file here associates the **application/x-newtype** MIME type with an application named **My Application 1**. It is run by a command **myapplication1**.

Based on how **myapplication1** gets started, select one relevant field code from [Desktop Entry Specification](#). For example, for an application capable of opening multiple files, use:

```
Exec=myapplication1 %F
```

3. As a root user, update the MIME database for your changes to take effect.

```
# update-mime-database /usr/share/mime
```

4. As a root user, update the application database.

```
# update-desktop-database /usr/share/applications
```

Verification

1. To verify that you have successfully associated ***.xyz** files with the **application/x-newtype** MIME type, first create an empty file, for example `test.xyz` and execute the following commands:

```
$ touch test.xyz
```

```
$ gvfs-info test.xyz | grep "standard::content-type"
standard::content-type: application/x-newtype
```

- To verify **myapplication1.desktop** is correctly set as the default registered application for the **application/x-newtype** MIME type, execute following command:

```
$ gio mime --query application/x-newtype
Default application for 'application/x-newtype': myapplication1.desktop
Registered applications:
myapplication1.desktop
Recommended applications:
myapplication1.desktop
```

11.3. ADDING A CUSTOM MIME TYPE FOR INDIVIDUAL USERS

You can add a custom MIME type for individual user on the system and register a default application for that MIME type.

Procedure

- Create the **~/.local/share/mime/packages/application-x-newtype.xml** file with following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<mime-info xmlns="http://www.freedesktop.org/standards/shared-mime-info">
  <mime-type type="application/x-newtype">
    <comment>new mime type</comment>
    <glob pattern="*.xyz"/>
  </mime-type>
</mime-info>
```

The sample **application-x-newtype.xml** file here defines a new MIME type **application/x-newtype** and assigns file names with the **.xyz** extension to that MIME type.

- Create a new .desktop file named, for example, **myapplication1.desktop**, and place it in the **~/.local/share/applications/** directory with following content:

```
[Desktop Entry]
Type=Application
MimeType=application/x-newtype
Name=My Application 1
Exec=myapplication1 field_code
```

The sample **myapplication1.desktop** file above associates the **application/x-newtype** MIME type with an application named My Application 1. It is run by a command **myapplication1**.

Based on how **myapplication1** gets started, choose one respective field code from [Desktop Entry Specification](#). For example, for an application capable of opening multiple files, use:

```
Exec=myapplication1 %F
```

- Update the MIME database for your changes to take effect:

```
$ update-mime-database ~/.local/share/mime
```

4. Update the application database:

```
$ update-desktop-database ~/.local/share/applications
```

Verification

1. To verify that you have successfully associated ***.xyz** files with the **application/x-newtype** MIME type, first create an empty file, for example, test.xyz and execute the following commands:

```
$ touch test.xyz
```

```
$ gvfs-info test.xyz | grep "standard::content-type"
standard::content-type: application/x-newtype
```

2. To verify that **myapplication1.desktop** is correctly set as the default registered application for the **application/x-newtype** MIME type, execute following command:

```
$ gio mime --query application/x-newtype
```

```
Default application for 'application/x-newtype': myapplication1.desktop
```

```
Registered applications:
```

```
myapplication1.desktop
```

```
Recommended applications:
```

```
myapplication1.desktop
```

11.4. OPTIONS TO OVERRIDE DEFAULT MIME TYPES

By default, the package-installed **/usr/share/applications/mimeapps.list** and **/usr/share/applications/gnome-mimeapps.list** files specify the application registered to open specific MIME types.

System administrators can create the **/etc/xdg/mimeapps.list** or **/etc/xdg/gnome-mimeapps.list** file with a list of MIME types they want to override with the default registered application.

Local users can create the **~/.local/share/applications/mimeapps.list** or **~/.local/share/applications/gnome-mimeapps.list** file with a list of MIME types for which they want to override the default registered application.

Configurations are applied in the following order:

1. **/usr/share/applications/**
2. **/etc/xdg/**
3. **~/.local/share/application/**

Within a particular location, the configurations are applied in the following order:

1. mimeapps.list
2. gnome-mimeapps.list

11.5. OVERRIDING DEFAULT REGISTERED APPLICATION FOR ALL THE USERS

As a system administer, you can update the configuration based on the requirements. System administrator's configuration takes precedence over default package configuration. Within each, the desktop-specific configuration takes precedence over the configuration that does not specify the desktop environment.

Procedure

1. Consult the **/usr/share/applications/mimeapps.list** file to determine the MIME types for which you want to change the default registered application. For example, the following sample of the **mimeapps.list** file specifies the default registered application for the **text/html** and **application/xhtml+xml** MIME types:

```
[Default Applications]
text/html=firefox.desktop
application/xhtml+xml=firefox.desktop
```

This example above specifies default application (Mozilla Firefox) by specifying its corresponding **.desktop** file (**firefox.desktop**). You can find **.desktop** files for other applications in the **/usr/share/applications/** directory.

2. Create the **/etc/xdg/mimeapps.list** file and specify the MIME types and their corresponding default registered applications in this file.

```
[Default Applications]
text/html=myapplication1.desktop
application/xhtml+xml=myapplication2.desktop
```

This example above sets the default registered application for the **text/html** MIME type to **myapplication1.desktop** and **application/xhtml+xml** MIME type to **myapplication2.desktop**.

Verification

- For these settings to function correctly, ensure that both the **myapplication1.desktop** and **myapplication2.desktop** files are placed in the **/usr/share/applications/** directory.
- Verify that the default registered application is set correctly:

```
$ gio mime text/html
Default application for 'text/html': myapplication1.desktop
Registered applications:
myapplication1.desktop
firefox.desktop
Recommended applications:
myapplication1.desktop
firefox.desktop
```

11.6. OVERRIDING DEFAULT REGISTERED APPLICATION FOR INDIVIDUAL USERS

Individual users can also update the configuration based on the requirements. This configuration takes

precedence over the system administrator's configuration and the system administrator's configuration takes precedence over the package configuration. Within each, the desktop-specific configuration takes precedence over the configuration that does not specify the desktop environment.

Procedure

1. Consult the **/usr/share/applications/mimeapps.list** file to determine the MIME types for which you want to change the default registered application. For example, the following sample of the **mimeapps.list** file specifies the default registered application for the **text/html** and **application/xhtml+xml** MIME types:

```
[Default Applications]
text/html=firefox.desktop
application/xhtml+xml=firefox.desktop
```

This example above specifies default application (Mozilla Firefox) by specifying its corresponding **.desktop** file (**firefox.desktop**). You can find **.desktop** files for other applications in the **/usr/share/applications/** directory.

2. Create the **~/.local/share/applications/mimeapps.list** file and specify the MIME types and their corresponding default registered applications in this file.

```
[Default Applications]
text/html=myapplication1.desktop
application/xhtml+xml=myapplication2.desktop
```

This example above sets the default registered application for the **text/html** MIME type to **myapplication1.desktop** and **application/xhtml+xml** MIME type to **myapplication2.desktop**.

Verification

- For these settings to function correctly, ensure that both the **myapplication1.desktop** and **myapplication2.desktop** files are placed in the **/usr/share/applications/** directory.
- Execute the **gio mime query** command to verify that the default registered application is set correctly.

```
$ gio mime text/html
Default application for 'text/html': myapplication1.desktop
Registered applications:
myapplication1.desktop
firefox.desktop
Recommended applications:
myapplication1.desktop
firefox.desktop
```