



# Red Hat Enterprise Linux 9

## Getting started with the GNOME desktop environment

Getting started with the GNOME desktop environment on Red Hat Enterprise Linux

9



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## Abstract

This document describes how to use GNOME, which is the only desktop environment available in RHEL 9. It explains the basics of using GNOME Shell and certain GNOME applications.

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## MAKING OPEN SOURCE MORE INCLUSIVE

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# CHAPTER 1. OVERVIEW OF GNOME ENVIRONMENTS

You can switch between several user interfaces and graphics back ends in GNOME.

## 1.1. GNOME ENVIRONMENTS, BACK ENDS, AND DISPLAY PROTOCOLS

This sections provides information on two available GNOME environments:

- GNOME Standard
- GNOME Classic

Both environments can use two different protocols as their graphical back ends:

- The **Wayland** protocol, which uses **GNOME Shell** as the **Wayland** compositor and display server.  
This solution of display server is further referred as **GNOME Shell on Wayland**
- The **X11** protocol, which uses **X.Org** as the display server.

The default combination in RHEL 9 is the GNOME Standard environment using **GNOME Shell on Wayland** as the display server. However, due to certain **Wayland** limitations, you might want to switch the graphics protocol stack to **X11**. You can also switch from GNOME Standard to GNOME Classic.

### Additional resources

- For information on how to switch the environments, see [Selecting GNOME environment 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 **system menu**.

### System menu

The **system menu** is located in the upper-right corner, and provides the following functionality:

- Updating settings
- Controlling the sound volume
- Accessing your Wi-Fi connection
- Switching the user
- Logging out
- Turning off the computer

### Activities Overview

The **Activities Overview** features windows and applications views that let you run applications and windows and switch between them.

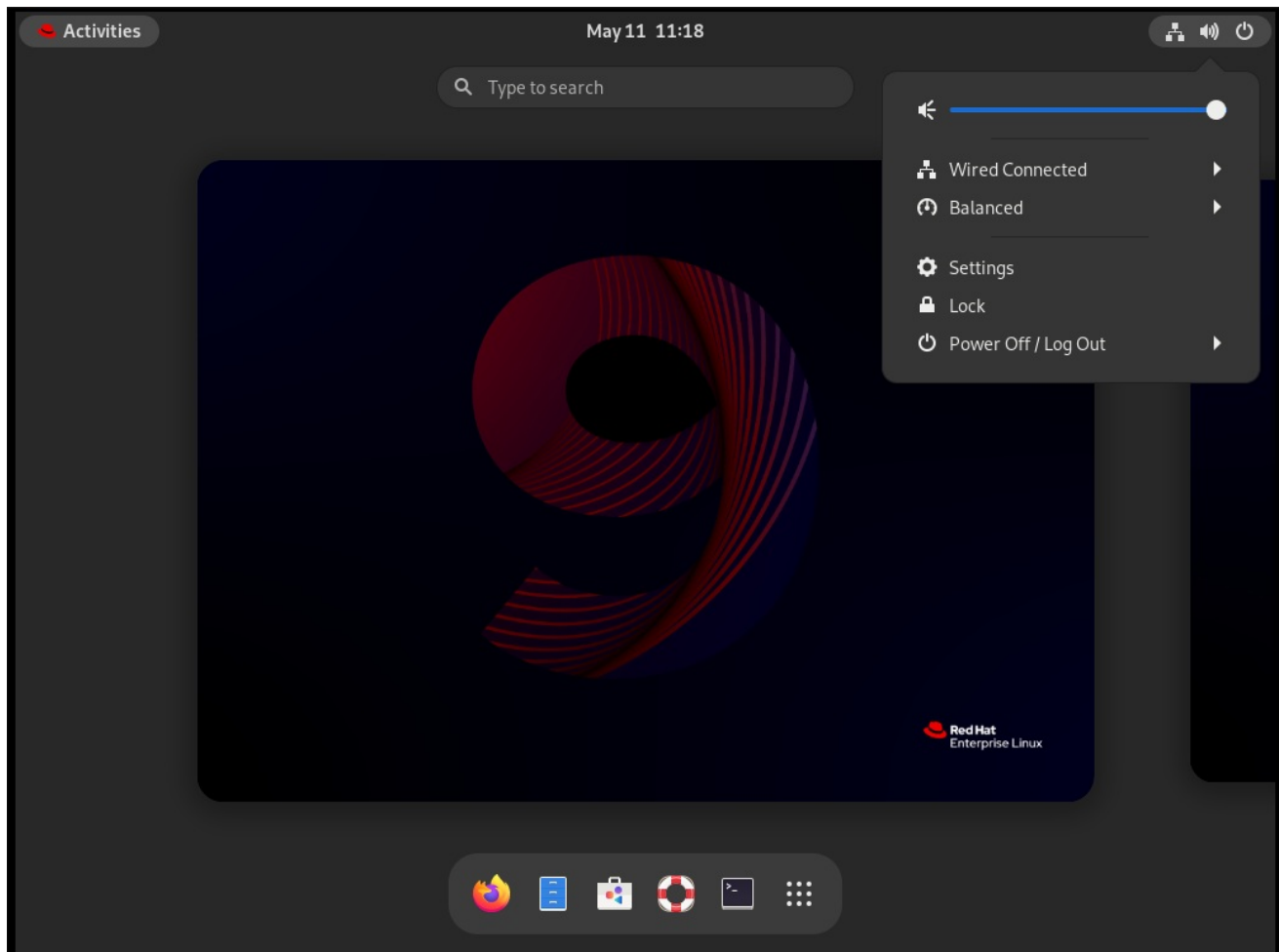
The **search entry** at the top allows for searching various items available on the desktop, including applications, documents, files, and configuration tools.

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.

### Message tray

The **message tray** provides access to pending notifications. The **message tray** shows when you press **Super+M**.

### The GNOME Standard desktop



## 1.3. GNOME CLASSIC

GNOME Classic represents a mode 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, and at the same time it includes multiple features similar to GNOME 2.

The GNOME Classic user interface consists of these major components:

### Applications and Places

The **Applications** menu is displayed at the upper-left corner of the screen. It gives you access to applications organized into categories. If you enable window overview, you can also open the **Activities Overview** from that menu.

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

## Taskbar

The **taskbar** is displayed at the bottom of the screen, and features:

- A window list
- A notification icon displayed next to the window list
- A short identifier for the current workspace and total number of available workspaces displayed next to the notification icon

## Four available workspaces

In GNOME Classic, the number of available workspaces is set to 4 by default.

## Minimize and maximize buttons

Window title bars in GNOME Classic feature the minimize and maximize buttons that let you quickly minimize the windows to the window list, or maximize them to take up all of the space on the desktop.

## A traditional **Super+Tab** window switcher

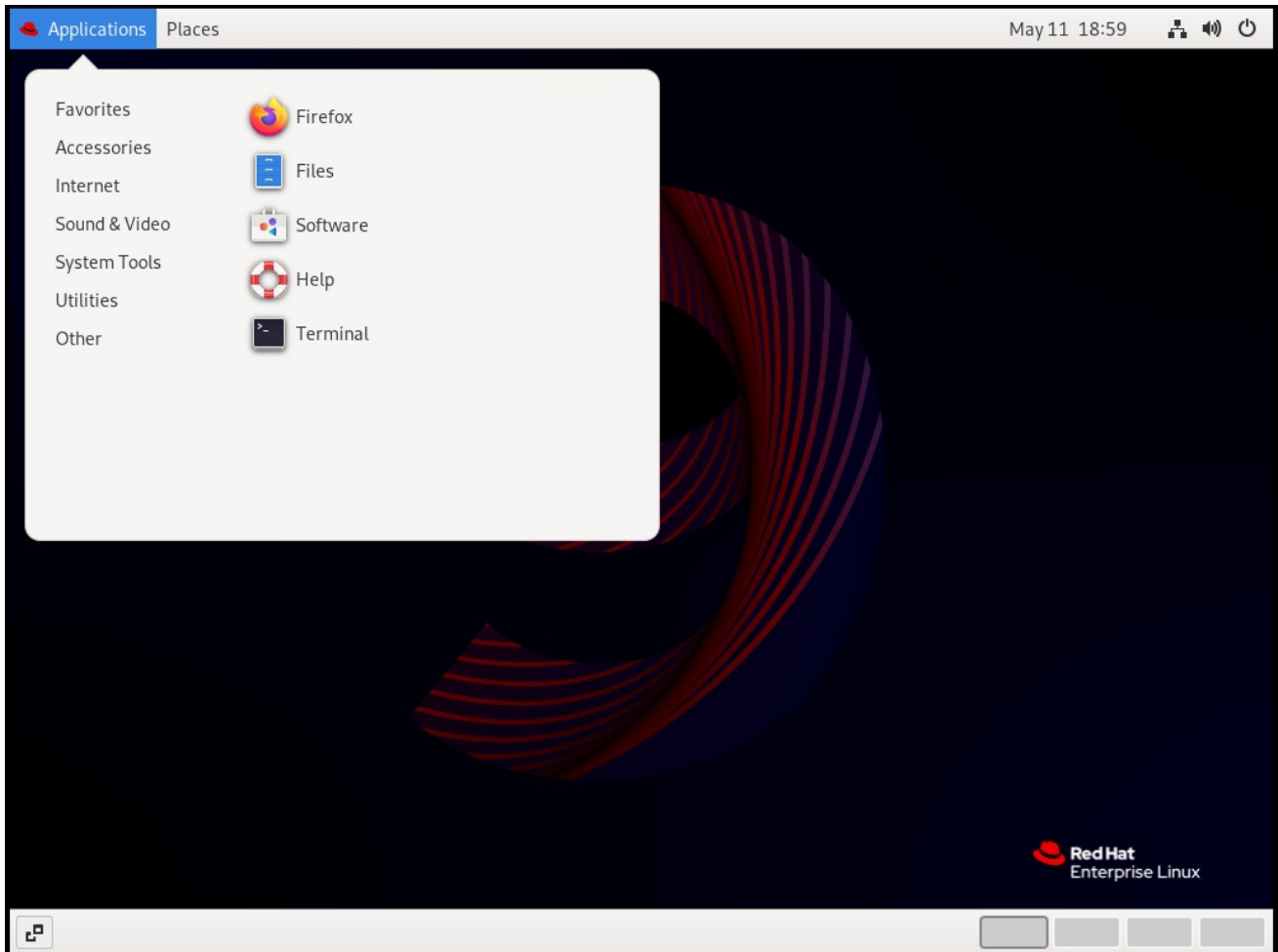
In GNOME Classic, windows in the **Super+Tab** window switcher are not grouped by application.

## System menu

The **system menu** is located in the upper-right corner, and enables the following actions:

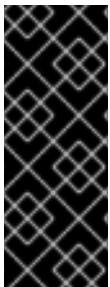
- Updating settings
- Controlling the sound volume
- Accessing your Wi-Fi connection
- Switching the user
- Logging out
- Turning off the computer

## The GNOME Classic desktop with the Favorites submenu of the Applications menu



## 1.4. ENABLING WINDOW OVERVIEW IN GNOME CLASSIC

In GNOME Classic, the overview of open windows is not available by default. This procedure enables the window overview for all users on the system.



### IMPORTANT

Enabling the window overview by this procedure is not a permanent change. Each update of the **gnome-classic-session** package overwrites the configuration file to the default settings, which disable the window overview.

To keep the window overview enabled, apply the procedure after each update of **gnome-classic-session**.

### Procedure

1. Open the `/usr/share/gnome-shell/modes/classic.json` file as the **root** user.
2. Find the following line in the file:

```
"hasOverview": false
```

3. Change the line to the following:

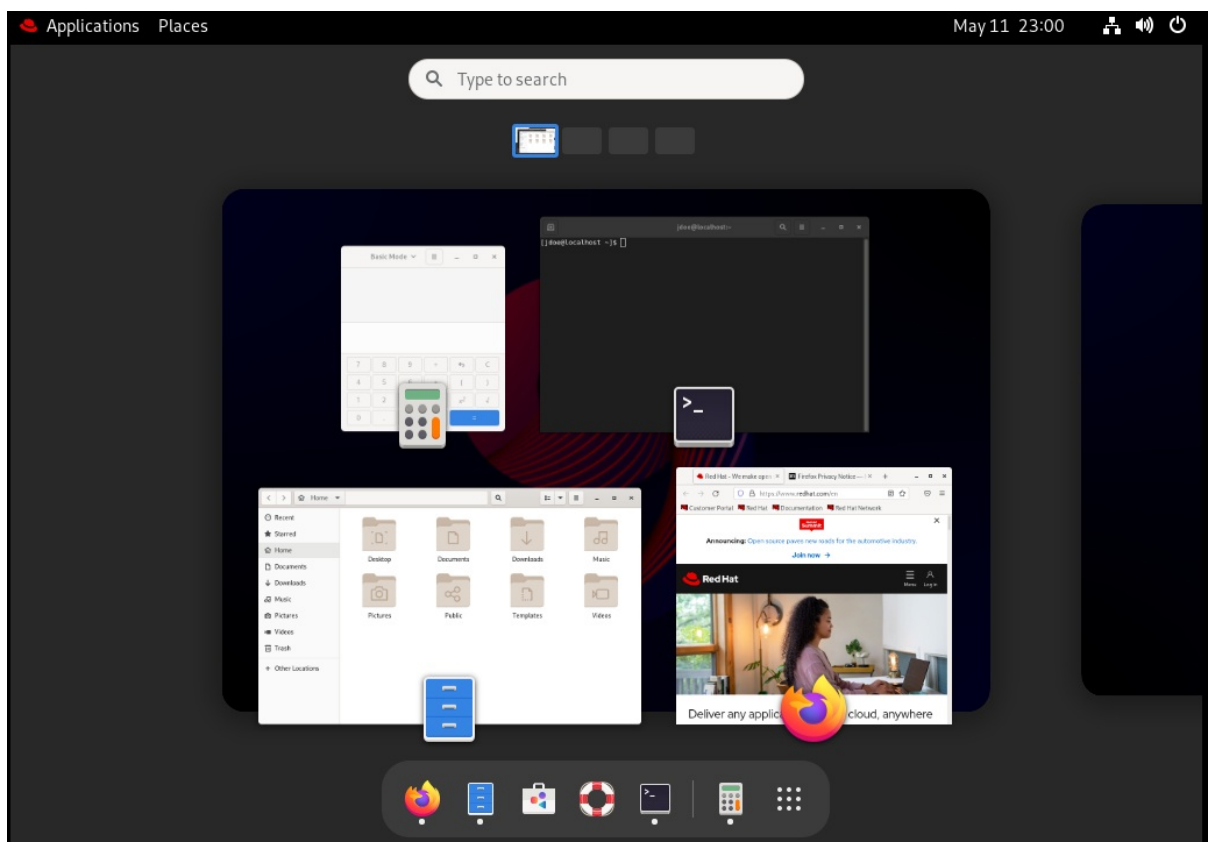
```
"hasOverview": true
```

4. Save changes, and close the `/usr/share/gnome-shell/modes/classic.json` file.
5. Restart the user session.

### Verification steps

1. In your GNOME Classic session, open multiple windows.
2. Press the **Super** key to open the window overview.
3. In the overview, check that:
  - The **Dash** (the horizontal panel on the bottom of the screen) is displayed.
  - The bottom panel is not displayed.

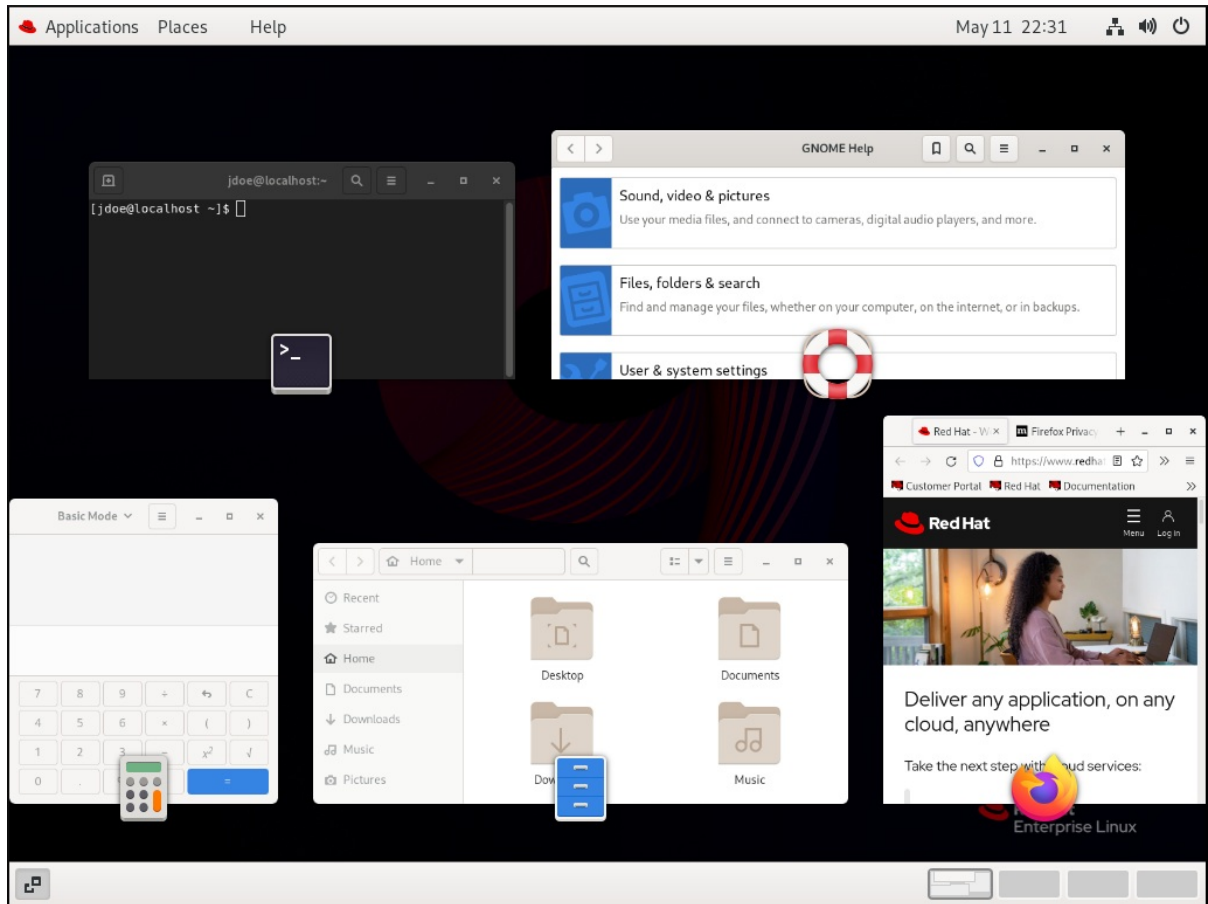
### Window overview with "hasOverview": true



With the default settings ("**hasOverview**": **false**), the overview has the following features:

- The **Dash** is not displayed.
- The bottom panel is displayed. It includes the **Window picker** button in its left part and the workspace switcher in its right part.

### Window overview with "hasOverview": false



## 1.5. GRAPHICS BACK ENDS IN RHEL 9

In RHEL 9, you can choose between two protocols to build a graphical user interface:

### Wayland

The **Wayland** protocol uses **GNOME Shell** as its compositor and display server, which is further referred to as **GNOME Shell on Wayland**

### X11

The **X11** protocol uses **X.Org** as the display server. Displaying graphics based on this protocol works the same way as in RHEL 7, where this was the only option.

New installations of RHEL 9 automatically select **GNOME Shell on Wayland**. However, you can switch to **X.Org**, or select the required combination of GNOME environment and display server.

### X11 applications

Client applications need to be ported to the **Wayland** protocol or use a graphical toolkit that has a **Wayland** backend, such as GTK, to be able to work natively with the compositor and display server based on **Wayland**.

Legacy **X11** applications that cannot be ported to **Wayland** automatically use **Xwayland** as a proxy between the **X11** legacy clients and the **Wayland** compositor. **Xwayland** functions both as an **X11** server and a **Wayland** client. The role of **Xwayland** is to translate the **X11** protocol into the **Wayland** protocol and reversely, so that **X11** legacy applications can work with the display server based on **Wayland**.

On **GNOME Shell on Wayland**, **Xwayland** starts automatically at login, which ensures that most **X11** legacy applications work as expected when using **GNOME Shell on Wayland**. However, the **X11** and **Wayland** protocols are different, and certain clients that rely on features specific to **X11** might behave differently under **Xwayland**. For such specific clients, you can switch to the **X.Org** display server.

## Input devices

RHEL 9 uses a unified input stack, **libinput**, which manages all common device types, such as mice, touchpads, touchscreens, tablets, trackballs and pointing sticks. This unified stack is used both by the **X.Org** and by the **GNOME Shell on Wayland** compositor.

**GNOME Shell on Wayland** uses **libinput** directly for all devices, and no switchable driver support is available. Under **X.Org**, **libinput** is implemented as the **X.Org libinput** driver, and you can optionally enable the legacy **X.Org evdev** driver if **libinput** does not support your input device.

## Additional resources

- You can find the current list of environments for which Wayland is not available in the `/usr/lib/udev/rules.d/61-gdm.rules` file.
- For additional information on the **Wayland** project, see [Wayland documentation](#).

## 1.6. SELECTING GNOME ENVIRONMENT AND DISPLAY PROTOCOL

The default desktop environment for RHEL 9 is GNOME Standard with **GNOME Shell on Wayland** as the display server. However, due to certain limitations of **Wayland**, you might want to switch the graphics protocol stack. You might also want to switch from GNOME Standard to GNOME Classic.

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

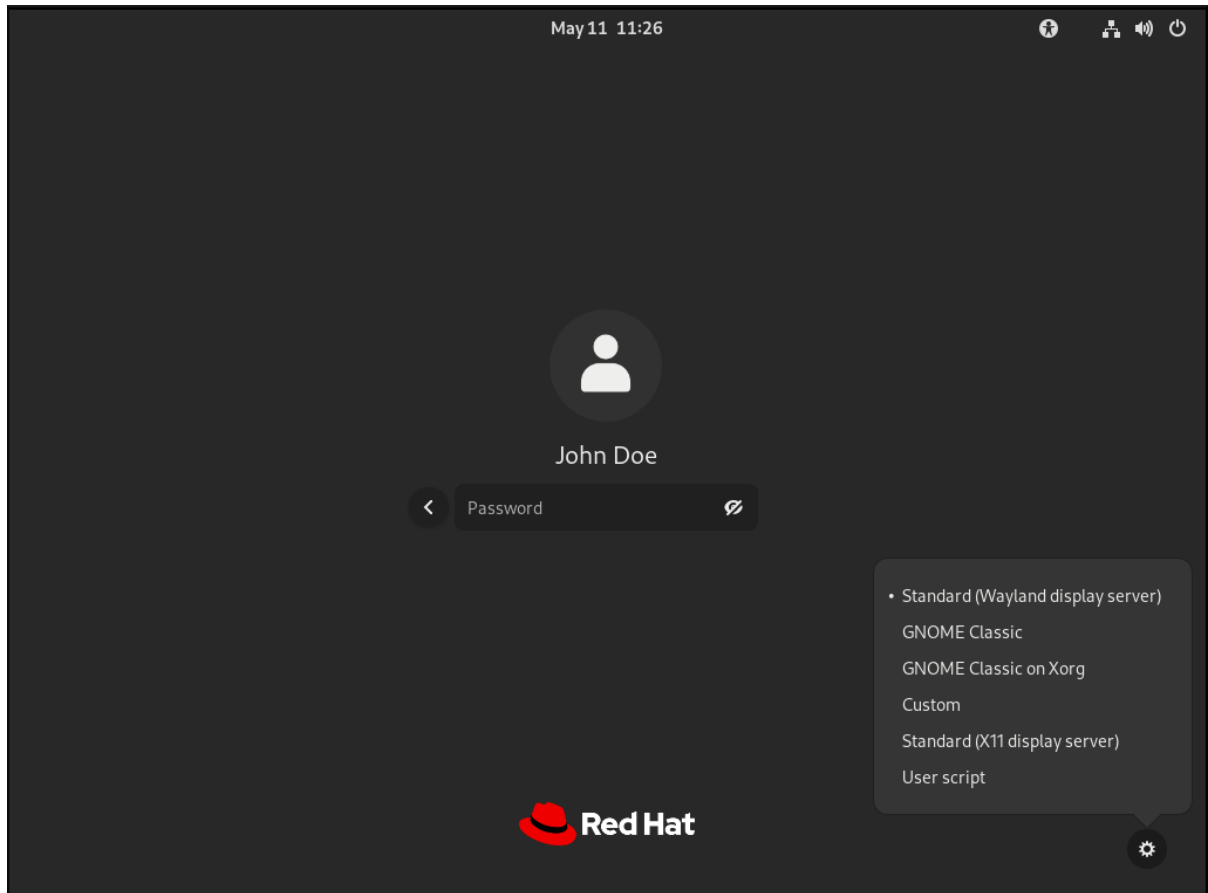
### Procedure

1. From the login screen (GDM), click the cogwheel in the right bottom corner of the screen.



### NOTE

You cannot access this option from the lock screen. The login screen 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. In the menu, the **X.Org** display server is also marked as **X11**.

## 1.7. DISABLING WAYLAND FOR ALL USERS

You can disable the Wayland session for all users on the system, so that they always log in with the X11 session.

### Procedure

1. Open the `/etc/gdm/custom.conf` file as the **root** user.
2. Locate the following line in the **[daemon]** section of the file:

```
#WaylandEnable=false
```
3. Uncomment the line by remove the **#** character. As a result, the line says:

```
WaylandEnable=false
```
4. Reboot the system.



## CHAPTER 2. LAUNCHING APPLICATIONS IN GNOME

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

### 2.1. LAUNCHING AN APPLICATION IN THE STANDARD GNOME SESSION

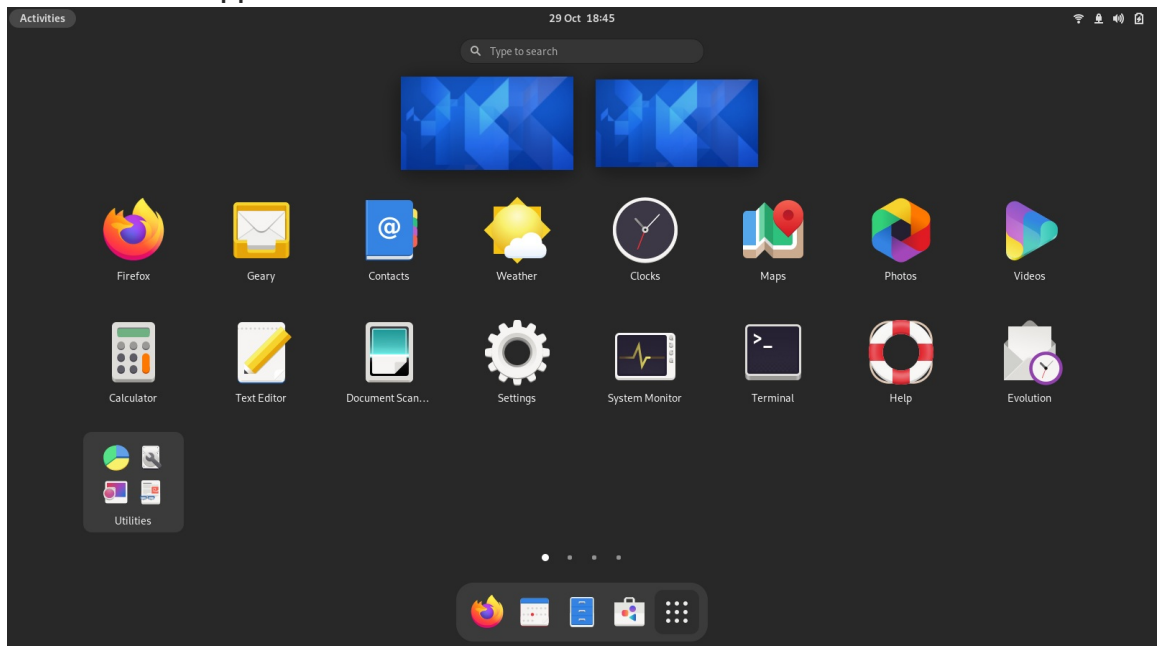
This procedure launches a graphical application in the GNOME desktop environment.

#### Prerequisites

- You are using the standard GNOME session.

#### Procedure

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



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

### 2.2. LAUNCHING AN APPLICATION IN GNOME CLASSIC

This procedure launches a graphical application in the GNOME Classic desktop environment.

#### Prerequisites

- You are using the GNOME Classic session.

### Procedure

1. Open the **Applications** 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

## 2.3. LAUNCHING AN APPLICATION IN GNOME USING A COMMAND

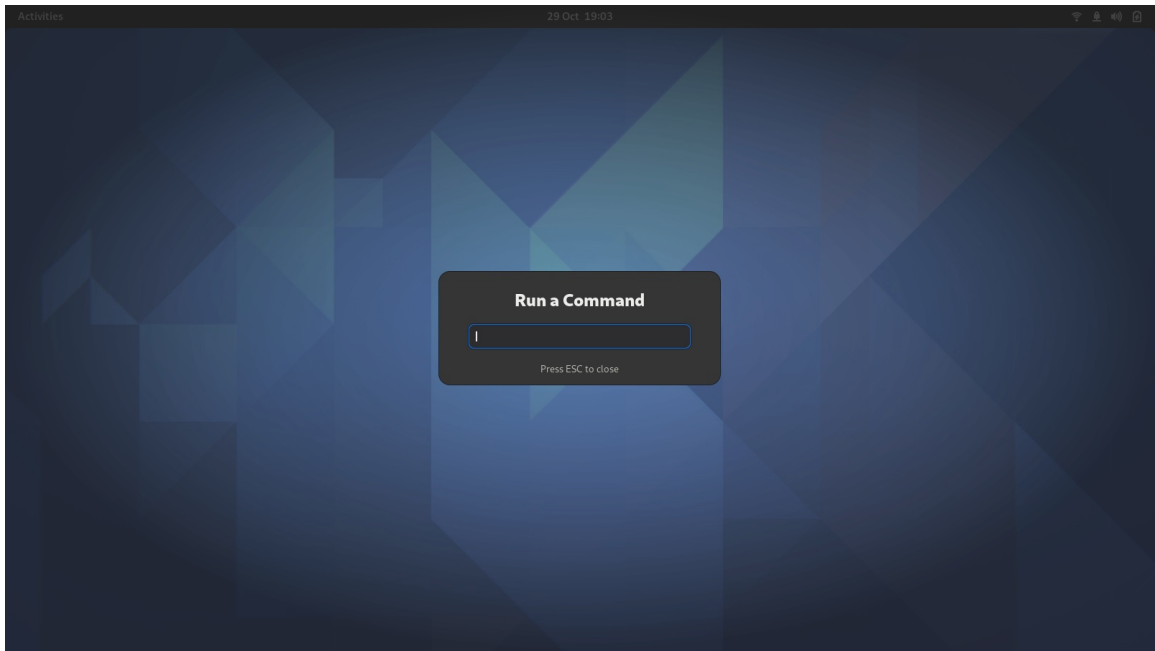
This procedure launches a graphical application in GNOME by entering a command.

### Prerequisites

- You know the command that starts the application.

### Procedure

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



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

## CHAPTER 3. TYPING EMOJI CHARACTERS

You can type emoji characters using several different methods in GNOME, depending on the type of the application.

### 3.1. TYPING EMOJI CHARACTERS IN GTK APPLICATIONS

This procedure inserts an emoji character in an application that uses the GTK graphical toolkit, such as in native GNOME applications.

#### Prerequisites

- Make sure that the application is built on the GTK toolkit.

#### Procedure

1. Open a GTK application.
2. Make sure that a text field is active.
3. Press **Ctrl+;**.  
The emoji selection menu opens.
4. Browse the emoji characters or type a keyword that identifies the emoji character that you want to insert, such as **smile**.  
For the full list of keywords associated with emoji characters, see the *Other Keywords* column on the [Emoji List](#) page.
5. Click the selected character, or navigate to it using the cursor keys and press **Enter**.

#### Verification

- Check that the intended emoji character now appears at your cursor.

### 3.2. TYPING EMOJI CHARACTERS IN ANY APPLICATIONS

This procedure inserts an emoji character in any application, regardless of the graphical toolkit that the application uses.

#### Procedure

1. Open an application.
2. Make sure that a text field is active.
3. Press **Ctrl+.**.  
The underscored letter **e** appears at your cursor.
4. Type a keyword that identifies the emoji character that you want to insert, such as **smile**.  
For the full list of keywords associated with emoji characters, see the *Other Keywords* column on the [Emoji List](#) page.
5. Repeatedly press **Space** to browse the emoji characters that match your keyword.

6. Confirm the selected emoji character by pressing **Enter**.

#### Verification

- Check that the intended emoji character now appears at your cursor.