

# Desktop Environemt

Pick your poison

- GNOME
- KDE Plasma

# GNOME

Base GNOME packages for the full GNOME experience. Bundle with other packages to prevent package conflicts providing the same functionality.

**TIP:** Include any and all packages you want installed in a list to `pacman`. That way `pacman` will resolve package dependencies correctly and not install packages that would cause conflicts with other packages later on in the setup; e.g. the `gnome` group installs `pulseaudio`, but `pulseaudio` and `pipewire` (see below) are conflicting packages, meaning they can't both be installed at the same time prompting you to remove one or the other. Explicitly selected packages take precedence over packages auto-selected via dependencies.

```
pacman -S gnome gnome-extra
```

## Setting up display manager

### Start GDM on boot

Start the GNOME Display Manager (GDM) on boot to be presented with a graphical login screen.

```
systemctl enable gdm
```

### When using NVIDIA proprietary drivers

For the longest time NVIDIA only supported their EGLStreams interface for Wayland sessions. Despite GNOME having support for both EGLStreams and the more popular GBM interface, the GNOME Display Manager disables the Wayland session via a `udev` rule, if it detects the proprietary driver is in use, to prevent problems with the login screen not showing.

To force enable GNOME's Wayland session even with the proprietary NVIDIA driver installed, check the following files:

- `/etc/gdm/custom.conf`: Make sure the line `WaylandEnable=false` is **commented out** (should be by default)
- `/usr/lib/udev/rules.d/61-gdm.rules`: Rename the file and create a symbolic link to `/dev/null`

```
In -s /dev/null /usr/lib/udev/rules.d/61-gdm.rules
```

Keep in mind that Wayland depends on Kernel Mode Setting to function properly, so it is necessary to include the appropriate kernel modules in the initramfs and setting the kernel commandline parameter to enable KMS support for the proprietary NVIDIA driver!

See [Graphics Cards](#) on how to set up early KMS with the proprietary NVIDIA driver.

## Set Keymap for GDM

**NOTE:** Executing this command while `chroot`ed into an installation will produce an error that the locale could not be found. Set after rebooting the system, press `CTRL + ALT + F3` when GDM shows up (or any F-key between 2 and 7) to switch tty, log in via the command line and execute the command as `root`.

```
localectl set-x11-keymap de
```

See instructions at [Plymouth page](#) on how to set up Plymouth.

## Misc additional packages

Additional packages you might want:

Name	Description
<code>gthumb</code>	Image viewer with simple editing capabilities
<code>lollypop</code>	Music player for GNOME
<code>seahorse</code>	Secrets manager (login credentials, SSH keys, GPG keys)
<code>fwupd</code>	Firmware update manager; allows UEFI capsule updates in GNOME Software if supported by firmware

```
pacman -S gthumb lollypop seahorse fwupd
```

## GNOME Keyring

Gnome Keyring is a useful tool for securely storing and managing passwords, SSH keys, and other sensitive information.

As `gnome-keyring` is already a member of the `gnome` package group, it should already be installed.

To manage the contents of `gnome-keyring` install `seahorse`:

```
pacman -S seahorse
```

## SSH Keys

You can use `gnome-keyring` to store the passphrases of your SSH keys for passwordless authentication. However, the `systemd` user service file does not include the `ssh` component.

To include the `ssh` component, edit the `systemd` unit file:

```
systemctl edit --user gnome-keyring-daemon
```

This opens an editor with a temporary drop-in file. In here you can override the parameters of the `systemd` unit file:

**NOTE:** To properly replace a parameter, it first needs to be empty and then repeated on the next line with the value you want it to have. Additionally, setting the `SSH_AUTH_SOCK` environment variable will make applications aware of an already unlocked SSH key.

```
[Service]
ExecStart=
ExecStart=/usr/bin/gnome-keyring-daemon --foreground --components="pkcs11,secrets,ssh" --control-
directory=%t/keyring
```

Save the file and close the editor. It will get automatically reloaded by `systemd` if necessary.

In order to reveal to applications that an SSH key has already been unlocked, set an environment variable for the current user:

```
echo SSH_AUTH_SOCK=$XDG_RUNTIME_DIR/keyring/ssh >> ~/.config/environment.d/envvars.conf
```

Re-login for the changes to take effect.

## Uniform application styles

# Qt applications

To make Qt/KDE applications fit in with the GNOME desktop you can install an Adwaita Qt theme and window decorations:

```
yay -S adwaita-qt{5,6}-git qadwaitadecorations-qt{5,6}
```

Then set the following environment variables in `~/.config/environment.d/qt.conf`:

```
QT_WAYLAND_DECORATION=adwaita
QT_STYLE_OVERRIDE=Adwaita-Dark
```

# GTK3 applications

There is an Adwaita theme that brings GTK3 apps in line with the current LibAdwaita theme:

```
pacman -S adw-gtk-theme
```

Then open GNOME Tweaks and set the application theme for legacy applications to `adw-gtk3` or `adw-gtk3-dark` (for apps that are not dark mode aware).

# Firefox

Screenshot of Firefox GNOME Theme

Firefox can be customized to look like a GNOME native application by applying a [GNOME Theme](#) to it.

The simplest way to apply the theme is by installing *Add Water*, an application that allows you to install/remove the Firefox GNOME theme with a single click. It also allows to customize the GNOME theme with several options. It can auto-detect different versions of Firefox (repo package, Flatpak, Snap) as well as Firefox forks (Floorp, Cachy, LibreWolf).

```
flatpak install dev.qwery.AddWater
```

**NOTE:** When Firefox receives an update the theme can break in some ways. When this happens you can uninstall the theme temporarily or hold off on updating Firefox until an updated version of the theme becomes available.

# Steam

Screenshot of Adwaita Steam Theme

There is an Adwaita theme available for Steam to make it fit in with the rest of the GNOME desktop. An app is available that can install and manage the theme for you:

```
flatpak install io.github.Foldex.AdwSteamGtk
```

## Remove potentially unwanted packages

### GNOME Dev Tools

```
pacman -Rsc gnome-{builder,devel-docs,multi-writer,terminal} accerciser d-spy devhelp glade sysprof
```

### User Software

```
pacman -Rsc gnome-{notes,recipes,sound-recorder} polari
```

### Games

```
pacman -Rsc gnome-{2048,chess,games,klotski,mahjongg,mines,nibbles,sudoku,taquin,tetravex} hitori iagno  
lightsoff quadrapassel tali
```

## Replace repo packages with Flatpaks

If you wish to use the Flatpak versions of packages that the GNOME desktop team maintains themselves, you can uninstall the packages that are available as Flatpak in GNOME Software.

# Remove

**TIP:** Put substrings of package names between curly brackets `{ }` so the shell substitutes the values, e.g. `gnome-{calculator,calendar,characters,clocks}` is interpreted as if you typed `gnome-calculator gnome-calendar gnome-characters gnome-clocks`. Nesting also works!

Packages part of the `gnome` package group:

```
pacman -Rn gnome-{calculator,calendar,characters,clocks,connections,contacts,font-viewer,logs,maps,music,text-editor,weather} \
baobab epiphany evince loupe simple-scan snapshot sushi totem
```

Packages part of the `gnome-extra` package group:

```
pacman -Rn accerciser cheese d-spy dconf-editor devhelp endeavour eog evolution geary ghex gitg glade \
gnome-{2048,boxes,builder,chess,devel-docs,dictionary,games,klotski,mahjongg,mines,multi-writer,nibbles,notes,photos,recipes,sound-recorder,sudoku,taquin,terminal,tetravex,tweaks} \
hitori iagno lightsoff polari quadrapassel seahorse sysprof tali
```

# Reinstall

Install the core GNOME apps as Flatpaks:

**NOTE:** Some of the repo packages of the `gnome-extra` group have been discontinued by GNOME. The following Flatpak selections replaces these with actively developed alternatives.

```
flatpak install flathub
org.gnome.{Calculator,Calendar,Calls,Snapshot,Characters,clocks,ColorViewer,Connections,Contacts,baobab,SimpleScan,Evince,Extensions,font-viewer,Loupe,Logs,Maps,Music,NautilusPreviewer,TextEditor,Showtime,Weather,Epiphany}
```

Selection of Flatpaks previously from the `gnome-extra` package group:

```
flatpak install flathub
org.gnome.{Evolution,Geary,GHex,gitg,Glade,Boxes,Photos,seahorse.Application,World.Iotas} ca.desrt.dconf-editor io.github.alainm23.planify page.kramo.Cartridges page.tesk.Refine com.mattjakeman.ExtensionManager io.gitlab.adhami3310.Impression
```

For a list of additional packages, see [GNOME Flatpaks](#).



# KDE Plasma

Base KDE Plasma packages for the full Plasma experience. Bundle with other packages to prevent package conflicts providing the same functionality.

**TIP:** Include any and all packages you want installed in a list to `pacman`. That way `pacman` will resolve package dependencies correctly and not install packages that would cause conflicts with other packages later on in the setup; e.g. the `plasma` group installs `pulseaudio` as a dependency of `plasma-pa`, but `pulseaudio` and `pipewire` (see below) are conflicting packages, meaning they can't both be installed at the same time prompting you to remove one or the other. Explicitly selected packages take precedence over packages auto-selected via dependencies.

```
pacman -S plasma plasma-wayland-session kde-applications
```

## Setting up the display manager

The `plasma` package group includes the Simple Desktop Display Manager (SDDM) for signing into KDE Plasma sessions and others.

Enable SDDM to start on boot and present a graphical login interface:

```
systemctl enable sddm
```

SDDM uses the X11 keymap to determine the input method for the keyboard. Change the default keymap with `localectl`:

**NOTE:** Executing this command while `chroot` ed into an installation will produce an error that the locale could not be found. Set after rebooting the system, press `CTRL + ALT + F3` when SDDM shows up (or any F-key between 2 and 7) to switch tty, log in via the command line and execute the command as `root`.

```
localectl set-x11-keymap de
```

## KDE Wallet

KDE Wallet is the integrated password manager and secret store of KDE Plasma. It stores passwords to websites, WiFi networks, network shares, SSH keys and more.

# Unlock Wallet automatically on login

To automatically unlock your wallet on login, the `kwallet-pam` package provides the necessary PAM modules (already part of the `plasma` package group).

There are several caveats to consider:

- Only `blowfish` encryption is supported
- Wallet can only be unlocked if the autologin method saves the password, e.g. when using `pam_autologin`
- Wallet cannot be unlocked when logging in with a fingerprint
- Wallet must be named `kdewallet` (default name)
- Disabling automatic closing of Wallet may be desired to keep it from asking for the password after every use
- When choosing to secure Wallet with a password it must match the user account password

Automatic unlocking can also be achieved by setting no password. Do keep in mind, however, that this could lead to potentially undesired read/write access to your secrets. Enabling *Prompt when an application accesses a wallet* under *Access Control* is highly recommended.

When setting up with SDDM as display manager (default for Plasma) no further PAM configuration is necessary, as the config comes with SDDM.

## Storing SSH key passphrases in Wallet

KDE Wallet can be used to store passphrases for SSH keys and have a KDE prompt appear asking for the password.

To also automatically unlock the SSH keys a SSH agent needs to be set up and running.

The `openssh` package (since version 9.4p1-3) comes with a systemd **user unit** to start the SSH agent on login regardless of a graphical session running:

**NOTE:** This needs to be run as the user you set up earlier, without `sudo`.

```
systemd enable --user ssh-agent
```

The user unit creates a Unix socket for other applications to communicate with the agent. For these applications to know this socket, the `SSH_AUTH_SOCK` environment variable needs to be set. This

can be achieved via user-specific systemd environment variables.

On login, systemd parses `*.conf` files in `~/.config/environment.d/` and sets environment variables from these. Environment variables are set in a `KEY=VALUE` fashion.

Create a new file `~/.config/environment.d/ssh_agent.conf`:

```
SSH_AUTH_SOCKET=$XDG_RUNTIME_DIR/ssh-agent.socket
```

Additionally, to have a KDE dialog box appear in case the passphrase is not stored in your Wallet, point the `SSH_ASKPASS` environment variable to the `ksshaskpass` application (also included in the `plasma` package group):

```
SSH_ASKPASS=/usr/bin/ksshaskpass
SSH_ASKPASS_REQUIRE=prefer
```

# Chromium-based browsers

To make Chromium-based browsers (Google Chrome, Microsoft Edge, Brave, Opera, etc.) use Wallet as a password store launch it with `--password-store=kwallet5` or `--password-store=detect`.

To make this launch argument persistent, add it to the "flags" file for the Chromium-based browser you want to use:

Browser	Path
Chromium	<code>~/.config/chromium-flags.conf</code>
Google Chrome	<code>~/.config/chrome-flags.conf</code>
Google Chrome DEV	<code>~/.config/chrome-dev-flags.conf</code>
Vivaldi	<code>~/.config/vivaldi-stable.conf</code>

**See also:** [Making flags persistent](#) on Arch Wiki

# Misc additional packages

Additional packages you might want:

Name	Description
<code>freerdp</code>	Support for the Remote Desktop Protocol used for remote login to MS Windows machines

Name	Description
<code>kimageformats</code>	Support for additional image formats in Dolphin and Gwenview
<code>flatpak</code>	Support for installing applications as Flatpak packages from Flathub through Discover
<code>fwupd</code>	Firmware update manager; allows UEFI capsule updates in Discover if supported by firmware
<code>packagekit-qt6</code>	Manage Arch packages in Discover