

PiperRead: user manual

Read the selected or copied text aloud, offline

Version 0.4.1-beta

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Chapter 1: Install

Do you want the interface?

PiperRead comes in two forms. Choose one before you download anything.

Terminal and button. You select a text, then a keyboard shortcut, the `piperread` command or the button called Read Selection in your applications menu reads it aloud. Nothing stays in memory between two readings. This is the smaller installation: one package, about 195 MB to download and 680 MB once installed on Debian 13.

With the interface. Everything above, plus a tray icon that starts with your session, keeps the voice loaded and reads within a fraction of a second. It offers play, pause, stop, sentence-by-sentence navigation and a settings window. This is the larger installation, because the interface relies on Qt (PySide6), which the distributions do not package: about 460 MB to download and 1.4 GB once installed on Debian 13. Chapter 2 describes it.

The figures were measured in a container on Debian 13, dependencies included. On the other distributions, the terminal installation takes 117 to 304 MB to download and 329 to 792 MB on disk, and the installation with the interface 421 to 483 MB to download and 1.26 to 1.49 GB on disk.

If you are not sure, take the terminal and button installation: the interface can be added later, in one command, without reinstalling anything.

Your choice	Go to
Terminal and button, Linux	Terminal and button
With the interface, Linux	With the interface
With the interface, Windows	With the interface, on Windows

Each sequence below is complete: follow it from the first step to the last one without going back. Requirements, the content of the packages, installation from the sources, update and removal come after, in the reference part of this chapter.

Terminal and button

1. **Download the package for your distribution.** Get it from the download page of the website, <https://piperread.davalan.fr/>, or from the GitHub release, <https://github.com/RonanDavalan/PiperRead/releases/latest>. The file names below are those of version 0.4.1-beta. The GitHub release writes `.` in place of `~` in file names (`piperread_0.4.1.beta_all.deb` for `piperread_0.4.1~beta_all.deb`): in the command, type the name of the file you downloaded.
2. **Install it** with the line that matches your system, from the folder that holds the file.

```
# Debian 12 and 13, Ubuntu 22.04 and 24.04, and their derivatives
sudo apt install ./piperread_0.4.1~beta_all.deb
```

```
# Fedora 44
sudo dnf install ./piperread-0.4.1~beta-1.fc44.noarch.rpm

# openSUSE Leap 16.0
sudo zypper install ./piperread-0.4.1~beta-1.leap160.noarch.rpm

# Arch Linux
sudo pacman -U ./piperread-0.4.1beta-1-any.pkg.tar.zst
```

The installation downloads the Piper engine and needs a network connection at that moment only. The package itself is small and ships no voice.

3. **Add a voice.** Voices are large and each has its own licence, so none is installed for you. The first line of the list is the exact command that installs the recommended voice of your language:

```
piperread --list-voices
piperread --download-voice
```

Without a name, the second command offers the recommended voice and asks for confirmation. Nothing is downloaded before you confirm.

4. **Read something.** Select a text with the mouse, then run:

```
piperread
```

The selected text is read aloud. To check the installation, run `piperread --diagnose`; Chapter 3 explains its lines. Chapter 2 explains how to bind PiperRead to a keyboard shortcut.

To add the interface later, follow the sequence With the interface from step 1: `piperread` is already installed, so the package manager only adds `piperread-gui`.

With the interface

1. **Download the “all in one” archive for your distribution.** It holds the two packages that this installation needs, `piperread` and `piperread-gui`, and nothing else. Get it from the download page of the website, <https://piperread.davalan.fr/>, or from the GitHub release, <https://github.com/RonanDavalan/PiperRead/releases/latest>. There is one archive per family: `debian` (Debian and Ubuntu), `fedora`, `opensuse` and `arch`. The file names below are those of version 0.4.1-beta.
2. **Extract it and install both packages in one command.** Run the two lines that match your system, from the folder that holds the archive.

```
# Debian 12 and 13, Ubuntu 22.04 and 24.04, and their derivatives
tar -xzf piperread-all-in-one-0.4.1-beta-debian.tar.gz
sudo apt install ./piperread_0.4.1~beta_all.deb ./piperread-gui_0.4.1~beta_all.deb

# Fedora 44
tar -xzf piperread-all-in-one-0.4.1-beta-fedora.tar.gz
sudo dnf install ./piperread-0.4.1~beta-1.fc44.noarch.rpm ./piperread-gui-0.4.1~beta-1.fc44.
↪ noarch.rpm
```

```
# openSUSE Leap 16.0
tar -xzf piperread-all-in-one-0.4.1-beta-opensuse.tar.gz
sudo zypper install ./piperread-0.4.1~beta-1.leap160.noarch.rpm ./piperread-gui-0.4.1~beta-1_
↳ .leap160.noarch.rpm

# Arch Linux
tar -xzf piperread-all-in-one-0.4.1-beta-arch.tar.gz
sudo pacman -U ./piperread-0.4.1beta-1-any.pkg.tar.zst ./piperread-gui-0.4.1beta-1-any.pkg.t_
↳ ar.zst
```

The installation downloads the Piper engine, then Qt (PySide6, about 245 MB) into a private Python environment, and needs a network connection at that moment only. The package manager orders the two packages itself. The packages ship no voice.

3. **Start the interface and add a voice.** The interface starts by itself the next time you open a session. To start it now, choose PiperRead in your applications menu, or run:

```
piperread-gui --play
```

Because no voice is installed yet, a window called “Download a voice” opens and lists the voices of your language, with their size and their licence. Choose one and click Download. Nothing is downloaded before that click. If you click “Not now”, the interface closes and names the commands that add a voice by hand, `piperread --list-voices` and `piperread --download-voice`. The Settings dialog of the interface has a “Download a voice...” button to add others later.

4. **Read something.** Select a text with the mouse, or copy it, then click the tray icon: it reads when stopped, pauses while reading and resumes when paused. A right click opens the menu. The `piperread` command and the Read Selection button work as well: the interface and the launcher do not drive each other. Chapter 2 describes the tray, the menu and the keyboard shortcuts.

GNOME shows no tray icon by default. The interface then says so once in a notification and stays usable through `piperread-gui --play`, `--pause`, `--resume` and `--stop`; Chapter 2 gives the extension that brings the icon back.

With the interface, on Windows

On Windows, only the interface exists: the launcher is a Linux tool. It is a self-contained folder that needs no installation and no administrator rights.

1. **Download `piperread-gui-windows.zip`** from the latest release, <https://github.com/RonanDavalan/PiperRead/releases/latest>.
2. **Unzip it anywhere, and keep the folder whole.** Each program needs the `_internal` folder next to it.
3. **Double-click `piperread-gui.exe`.** A tray icon appears. Because no voice is installed yet, a window called “Download a voice” opens. Choose a voice and click Download; nothing is downloaded before that

click. To add a voice by hand instead, put two files with the same name, `<name>.onnx` and `<name>.onnx.json`, from <https://huggingface.co/rhasspy/piper-voices>, in the voices folder of the unzipped folder.

4. **Read something.** Copy a text with Ctrl+C, then click the tray icon.

The build is not signed with a certificate that Windows recognises: SmartScreen may warn at the first launch. Choose More info, then Run anyway. On Windows the interface reads the clipboard only, not the mouse selection. It is an executable built on Windows and tested by hand on Windows 11; there is no automated test for Windows comparable to those run on the Linux packages.

Requirements

- **A Linux system** with a graphical session, Wayland or X11. Without a graphical session there is no text to select.
- **Python 3 with its venv module.** The Debian and Ubuntu package depends on it; on Fedora, openSUSE and Arch it comes with Python.
- **aplay**, from the `alsa-utils` package, to play the sound.
- **setsid and flock**, from `util-linux`, which every distribution installs by default.
- **A clipboard tool:** `wl-clipboard` under Wayland, `xsel` under X11. Have both if you use both; one of them is enough to start.
- **notify-send**, recommended, from `libnotify-bin` (Debian, Ubuntu), `libnotify` (Fedora, Arch) or `libnotify-tools` (openSUSE). Without it, alerts appear in the terminal only, which a keyboard shortcut does not have.
- **A network connection** while the engine, Qt (with the interface) and a voice are downloaded.

The packages declare these dependencies: the package manager installs them.

What the packages contain

Two packages, with the same behaviour on the four families.

`piperread` installs the program in `/usr/lib/piperread`, the `piperread` command in `/usr/bin`, a menu entry called Read Selection, the icon and the manual page in English, French, German and Spanish. When the package is configured, a script creates a private Python environment in `/usr/lib/piperread/venv` and installs the Piper engine in it with `pip`. If that download fails, the installation reports an error. Check the network connection, then run `sudo dpkg --configure -a` on Debian and Ubuntu, or install the package again on the other systems.

`piperread-gui` needs `piperread`. It installs the interface in `/usr/lib/piperread-gui`, the `piperread-gui` command, a menu entry called PiperRead and a startup entry, so that the interface starts with your session. When the package is configured, a script installs Qt (PySide6) with `pip` into a private Python environment.

The “all in one” archive is a plain `tar.gz` that holds the two packages of one family and nothing else. The `--diagnose` line called “Graphical interface” says whether `piperread-gui` is present, and where to get it when it is not.

Level reached. On Debian 12 and 13, Ubuntu 22.04 and 24.04, Fedora 44 and Arch Linux, installation, update from the previous version, diagnosis and removal were validated in a container. On openSUSE Leap 16.0, installation, diagnosis and removal were validated in a container. A container proves installation, diagnosis and removal; it proves neither the sound, nor the clipboard, nor the menu entry, nor the display.

Check an installation:

```
piperread --version
piperread --diagnose
```

The diagnostic reports a missing voice as a failure until you download one; see Chapter 3 for how to read its lines.

Install from the sources

Use this method to follow the development or to work without a package. Debian and Ubuntu, for instance, need the prerequisites first:

```
sudo apt update
sudo apt install -y python3 python3-venv python3-pip alsa-utils wl-clipboard xsel libnotify-bin
```

Then clone the repository, create the environment and download a voice:

```
mkdir -p ~/git/piper
cd ~/git/piper
git clone https://github.com/RonanDavalan/PiperRead.git
cd PiperRead
python3 -m venv piper-env
./piper-env/bin/pip install piper-tts
chmod 700 read.sh
./read.sh --download-voice
```

In a clone, the command is `./read.sh` instead of `piperread`, and the engine lives in the `piper-env` folder next to the script. The voices are stored in `~/.local/share/piperread/voices/`. A `voices` folder next to `read.sh`, if there is one, is read as well and comes first when both hold a voice of the same name; `--download-voice` then saves into it.

To add the program to the desktop menu, copy the launcher and refresh the menu database. The launcher expects the clone in `~/git/piper/PiperRead`, as above; edit the `Exec` line of the copy if you cloned elsewhere.

```
mkdir -p ~/.local/share/applications
cp Ressources/PiperRead.desktop ~/.local/share/applications/
update-desktop-database ~/.local/share/applications
```

To run the interface from the clone, follow `gui/README.md`.

Update and remove

To update, install the newer files the same way as the first ones: the new packages replace the old ones, and no manual step is needed.

To remove them, use your package manager. The environments are removed with the packages. Remove the interface before `piperread`.

```
sudo apt purge piperread-gui piperread      # Debian, Ubuntu
sudo dnf remove piperread-gui piperread     # Fedora
sudo zypper remove piperread-gui piperread  # openSUSE Leap
sudo pacman -R piperread-gui piperread      # Arch Linux
```

To remove the terminal installation only, name `piperread` alone. On Windows, untick “Start with the session” in the Settings of the interface, then delete the folder.

Your configuration and your downloaded voices belong to you and are never removed automatically. Delete them yourself if you do not plan to reinstall:

```
rm -r ~/.config/piperread ~/.local/share/piperread
```

Chapter 2: Use

What PiperRead does

PiperRead reads aloud the text you have selected with the mouse or copied to the clipboard, under Wayland as well as X11. The voice is produced on your machine by the neural Piper engine: no text and no sound ever leave it. Markdown symbols such as #, * or backticks are removed before reading, so that a formatted text is spoken as prose.

Only one reading runs at a time. Starting PiperRead again while it reads stops the previous reading and starts the new one.

Read a text

Three modes choose where the text comes from:

Command	Text read
<code>piperread selection</code>	the text selected with the mouse
<code>piperread clipboard</code>	the text copied with Ctrl+C
<code>piperread auto</code>	the selection, or the clipboard when nothing is selected

`auto` is the default: `piperread` alone does the same. A content made only of spaces and line breaks counts as empty; PiperRead then tells you that there is no text to read.

Bind a keyboard shortcut

PiperRead is meant to be launched from a keyboard shortcut: select a text, press the keys, listen. In the keyboard settings of your desktop, add a custom shortcut that runs the command `piperread`, then choose the keys you like.

Add one shortcut per action if you want them all: `piperread --stop`, `piperread --pause` and `piperread --resume` are separate commands, so that a shortcut does not need to know whether a reading is in progress.

A shortcut has no terminal to print in. PiperRead therefore writes every alert to the desktop notifications as well as to the standard error output.

Stop, pause and resume

```
piperread --stop      # end the reading in progress
piperread --pause     # suspend it
piperread --resume    # resume it where it stopped
```

Repeating a command has no effect. When nothing is being read, the message says so. The sound may continue for a fraction of a second after a pause, because the audio buffer empties first.

The interface

The interface is a separate program, installed by the “With the interface” sequence of Chapter 1, and independent of the launcher: neither drives the other. Started together, they read at the same time, with two voices overlapping. The launcher keeps nothing in memory between two readings and loads the voice at each one: the first sound comes about 1.3 seconds after the command. The interface keeps the voice loaded and prepares the next sentence while the current one plays: reading starts within 168 milliseconds of the click. Both figures were measured on 23 September 2026, on one machine with one voice; they give an order of magnitude, not a guarantee.

Start. The interface starts with your session. It also starts from the PiperRead menu entry or with `piperread-gui --play`. A tray icon appears, and the voice loads in the background. From a clone, once the environment of the `gui/` folder is set up, start it with `gui/.venv/bin/python3 -m piperread_gui.app`.

The icon. A left click reads when stopped, pauses while reading and resumes when paused. A right click opens the menu: Play, Pause, Stop, Previous sentence, Next sentence, Settings, Restart and Quit. Restart replaces the running interface with a new one that reads the configuration file again. The text read is the mouse selection, or the clipboard when nothing is selected (on Windows, the clipboard only), with the Markdown symbols removed.

The settings. The Settings entry opens a dialog for the voice, the speed, the language and “Start with the session”, and a “Download a voice...” button that opens the voice window. It writes the same configuration file as the launcher, described below. Untick “Start with the session” to stop the automatic start.

The commands. To bind the interface to keyboard shortcuts, use its own commands:

Command	Effect
<code>piperread-gui --play</code>	read; starts the interface first if none is running
<code>piperread-gui --pause, --resume, --stop</code>	pause, resume and stop the reading
<code>piperread-gui --next, --previous</code>	jump to the next or the previous sentence
<code>piperread-gui --quit</code>	quit the interface and its synthesis server

Except `--play`, these commands report an error when no interface is running.

Without a tray. KDE Plasma, XFCE, Cinnamon, MATE and LXQt show the icon natively. GNOME shows none by default: PiperRead says so once in a notification and stays usable through the commands above. To get the icon back, install the GNOME extension called “AppIndicator and KStatusNotifierItem Support”.

Speed, voice and language

Three settings change how PiperRead reads:

Option	Meaning
<code>--speed X</code>	speed multiplier from 0.5 to 3.0; 1 is the natural pace of the voice
<code>--voice NAME</code>	voice to use, as listed by <code>piperread --list-voices</code>
<code>--lang CODE</code>	language of the messages and of the default voice: en, fr, de or es

They combine with a mode, for example `piperread auto --speed 1.25`.

The configuration file

To keep your choices, write them in `~/.config/piperread/piperread.conf`, one key=value per line. Empty lines and lines starting with `#` are ignored.

```
# Read a little faster than the natural pace
speed=1.25
voice=en_US-ljspeech-medium
lang=en
telemetry=off
```

Each setting takes the first of these sources that defines it:

1. the command-line option;
2. the environment variable `PIPERREAD_SPEED`, `PIPERREAD_VOICE`, `PIPERREAD_LANG` or `PIPERREAD_TELEMETRY`;
3. the configuration file (on Windows, `%USERPROFILE%\config\piperread\piperread.conf`);
4. the default: natural speed, the first voice found, and telemetry off.

An invalid value never blocks a reading: PiperRead reports it and applies the next level. The default speed is the natural pace of the voice. Earlier versions read 1.25 times faster; write `speed=1.25` in the configuration file to get that pace back.

Engine telemetry

The inference library that Piper pulls in, `onnxruntime`, sends usage events to Microsoft by default. PiperRead turns them off before starting the engine, so that reading stays offline: `strace` shows no connection to the outside while reading, with the launcher and with the interface. On Windows, the library writes its events to the system, which may forward them according to your privacy settings; PiperRead uses the library's own switch. A measurement showed 4 initialisation events remaining, against 15 without the switch.

`telemetry` is the only setting without a command-line option. Write `telemetry=on` in the configuration file, or set `PIPERREAD_TELEMETRY=on`, to turn the events back on.

Voices

`piperread --list-voices` shows the voices on offer with their language, size, sampling rate and licence, without network access. Listen to samples at <https://rhasspy.github.io/piper-samples/>. The full catalogue is at <https://huggingface.co/rhasspy/piper-voices>.

```
piperread --list-voices
piperread --download-voice en_US-ljspeech-medium
piperread --download-voice          # offers the voice of your language
```

The first line of the list is the exact command that installs the recommended voice of your language, followed by “(installed)” when you already have it. In the interface, a window called “Download a voice” offers the same voices when none is installed, and the Settings dialog opens it again: nothing is downloaded before you click Download.

A voice is downloaded once into `~/.local/share/piperread/voices/` and then works without network. Several voices can live side by side; choose one with `--voice` or with `voice=` in the configuration file.

Summary of the commands

Command	Effect
<code>piperread [auto, selection, clipboard]</code>	read the text
<code>piperread --stop, --pause, --resume</code>	control the reading in progress
<code>piperread --list-voices</code>	list the voices on offer
<code>piperread --download-voice [NAME]</code>	download one or several voices
<code>piperread --diagnose</code>	check the installation, and say whether the interface is present
<code>piperread --version</code>	print the version
<code>piperread --help</code>	print a summary of the options
<code>piperread-gui --play, --pause, --resume, --stop, --next, --previous, --quit</code>	control the interface

The exit status is 0 on success, 1 when a dependency, the engine or a voice is missing or a diagnostic check fails, and 2 on a usage error.

Chapter 3: Troubleshoot

Start with the diagnostic

```
piperread --diagnose
```

The diagnostic checks the installation from end to end and does not stop at the first problem. It plays no sound and never reads the clipboard, so it reveals nothing and disturbs nobody. Each line starts with a status:

Status	Meaning
OK	the check passed
WARNING	something is missing that may matter on your machine
FAILED	PiperRead cannot read until this is fixed

The last line counts the failures and the warnings. The exit status is 1 when there is at least one failure. The checks are the Piper engine, the voice, the audio player, the tools (`setsid` and `flock`), the clipboard tool, the configuration file and the runtime directory. A last line, “Graphical interface”, says whether the `piperread -gui` interface is present and, when it is not, which package to install; it never counts as a failure.

In a container or over SSH, there is no sound card and no graphical session: two warnings are then normal.

When a shortcut does nothing

A shortcut has no terminal, so nothing shows the error there. Run the same command in a terminal to see it. When `notify-send` is installed, PiperRead also writes every alert to the desktop notifications.

Symptoms, causes and actions

Symptom	Cause	Action
Nothing is read; the message says there is no text	nothing is selected and the clipboard is empty or only holds spaces	select a text, or copy one with Ctrl+C, then run PiperRead again
The message says no voice is installed	no voice was downloaded	run <code>piperread --download-voice</code> , or click Download in the voice window of the interface
A dependency is reported missing	a program such as <code>aplay</code> , <code>setsid</code> , <code>flock</code> , or both <code>wl-paste</code> and <code>xsel</code> , is absent	install the package that provides it (see Chapter 1)
The message says the virtual environment is not found	the engine was never installed, or the environment was deleted	reinstall the package; from a clone, recreate <code>piper-env</code> (Chapter 1)

Symptom	Cause	Action
The diagnostic cannot import piper	the engine environment is damaged	reinstall the package; from a clone, run <code>./piper-env/bin/pip install --force-reinstall piper-tts</code>
The text is read but there is no sound	wrong output device, muted sound, or no sound card	check that <code>aplay -l</code> lists a card, and the volume in your desktop settings
Nothing is read although a text is selected	the clipboard tool of your session is absent: <code>wl-paste</code> reads Wayland, <code>xsel</code> reads X11	install <code>wl-clipboard</code> under Wayland, <code>xsel</code> under X11
A voice is reported not found or replaced	the name in <code>--voice</code> or in the file is misspelled, or the voice was not downloaded	compare with <code>piperread --list-voices</code> and download it
A message names an invalid value	a setting is out of range, for instance a speed above 3.0	correct the option, the variable or the line of the file; the next level applies meanwhile
The diagnostic reports an unknown key	a line of <code>piperread.conf</code> is misspelled	only speed, voice, lang and telemetry exist
The runtime directory is refused	the folder in <code>/tmp</code> or <code>XDG_RUNTIME_DIR</code> is not a private folder of yours	remove it or fix its owner, then retry

The interface

Symptom	Cause	Action
No tray icon on GNOME	GNOME shows no notification area by default	install the extension “AppIndicator and KStatusNotifierItem Support”; meanwhile the <code>piperread-gui</code> commands work
<code>piperread-gui --pause</code> and the other commands report an error	no interface is running	run <code>piperread-gui --play</code> , which starts it, or launch it from the menu
Two voices read at once	the launcher and the interface were both started	use only one of the two gestures
The first reading is late after the session opens	the voice is still loading in the background	wait a few seconds; the next readings start at once

Symptom	Cause	Action
The interface does not start	a dependency of the package is missing or its private environment is damaged	run <code>piperread-gui</code> in a terminal to see the message, then reinstall the package
A setting edited by hand in the configuration file is ignored	the interface reads the file only when it starts	choose Restart in the menu
<code>piperread-gui: command not found</code> , or the diagnostic says the interface is absent	only the <code>piperread</code> package is installed	follow the sequence “With the interface” of Chapter 1
The interface closed at its first start	no voice is installed and you chose “Not now” in the voice window	start it again and click Download, or run <code>piperread --download-voice</code>
Windows warns at the first launch	the build is not signed with a certificate Windows recognises	choose More info, then Run anyway
The interface starts at every session and you do not want it	“Start with the session” is ticked	untick it in the Settings

Wayland or X11

PiperRead tries `wl-paste` first, which reads the Wayland selection and clipboard, then `xsel`, which reads the X11 ones. If your machine runs both kinds of session, or if you use both kinds of application, install both tools. The diagnostic names the tool it found and warns when no graphical session is running.

Get help

Report a problem on <https://github.com/RonanDavalan/PiperRead/issues>. Include the version printed by `piperread --version` and the complete output of `piperread --diagnose`. The diagnostic contains no text you have read, so it is safe to share.