

# The State of i18n in Fedora Workstation

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# Some current i18n UX issues

## ~~The State of i18n~~ in Fedora Workstation

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fedora

WORKSTATION

# About me

Jens Petersen (Red Hat) - @juhp

i18n Engineering Manager in the Desktop group

Fedora i18n and Fedora Workstation WG

Also passionate about Haskell and FuncProg

**Fedora Workstation is the GNOME edition of Fedora**



Fedora has a long tradition of i18n, coming from RHL

# Abbreviations

i18n = Internationalization

L10n = Localization

( g11n = Globalization )

F43 = Fedora Linux 43

F44 = Fedora Linux 44

# Internationalization (i18n)

## Input methods & keyboard layouts

- ibus and fcitx; xkeyboard-config
- Hunspell dictionaries

## Charsets and encodings

- Unicode

## Fonts & text rendering

- Fontconfig
- Pango and Harfbuzz

## Locales & Localization technology

- Glibc and ICU locales
- Gettext

**So how is the actual i18n UX (user experience) with GNOME in Fedora Workstation?**



# **18n UX considerations for core desktop**

- Installation from Live image (Anaconda)
- `gnome-initial-setup` and `control-center`
- Input
- Fonts



## **The good and the bad...**

*This talk focuses more on i18n UX issues and low or high “hanging fruit” that can be “picked”...*

*But we have already come a very long way with i18n in GNOME, which is probably still best of class for i18n among Linux Desktops*

# Installation: obstacle 1

F43 Workstation Live image starts in English

*There are some plans to address this in F44 by invoking some of `gnome-initial-setup` at Live WS startup*

# Installation: obstacle 2

Need to configure kbd layout in gnome-control-center  
(also only one input source allowed and must not be IME: particularly annoying since only one error shown at a time)

*There are some plans to address this in F44 by invoking some of  
gnome-initial-setup at Live WS startup*

We will revisit IME configuration later

# GNOME Initial setup: problem 1

“Tier 2” languages initially hidden under :

*Seems like a bug, since behavior different to input source search*

## GNOME Initial setup: problem 2

For languages using an IME, one can *only* select a keyboard layout *or* an input method

*(For an IME the kbd layout chosen during installation will be used)*

# GNOME Initial setup: problem 3

In F43, timezone does not use geolocation currently

*fixed recently upstream by @matiwari (and in Fedora Rawhide)*

# **GNOME Initial setup: problem 4**

Probably should not allow IME usage for username

# GNOME Control Center: Search

Type to search with IME preëdit fails for first character

*(known/reported upstream issue – workaround is to click the search button first)*



# Control Center: Input Sources 1

Input Methods should really be separated from keyboard layouts, since IME's actually operate over a layout (currently this is implicit)

## Control Center: Input Sources 2

Currently one can actually setup just a single IME

input source: meaningful for CJK at least

- e.g. `ibus-hangul` actually defaults to Latin (direct) input

# Control Center: Input Sources 3

CN, JP, KR & IN keyboard layouts are not really for CJKI input

- Native scripts require an IME

So describing them as “Chinese” or “Japanese”, etc is actually misleading.

They are national keyboard standards, not language script standards.

# Control Center: Timezone search

Timezone search only works in the desktop language

*(Latin-centric: it is often easier to search for cities using ASCII than native script)*

# GNOME Control Center: Language

Can only search in current or native script for languages

*(would be nice to also support English)*

# Fedora's default Input methods

Japanese: `ibus-anthy`

Korean: `ibus-hangul`

Simplified Chinese: `ibus-libpinyin`

Traditional Chinese: `ibus-chewing`

Other languages: mostly `ibus-m17n`

- also `ibus-typing-booster`

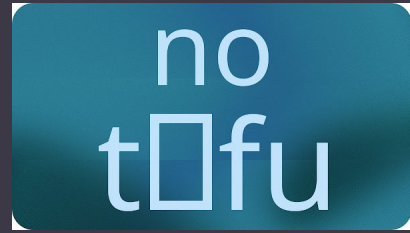
# Fedora default fonts coverage with Noto

<https://www.wikipedia.org/> and

[https://meta.wikimedia.org/wiki/List\\_of\\_Wikipedias](https://meta.wikimedia.org/wiki/List_of_Wikipedias)

- *Note Workstation now uses Adwaita as default system-ui fonts*

Users can install additional fonts for their native or preferred languages with langpacks packages



# There is more...

Emoji and Unicode input

Spellchecking is also important feature: hunspell

- also leveraged by `ibus-typing-booster`

GNOME Onscreen Keyboard has some i18n support

`ibus-speech-to-text` is being developed: `whispercpp`



## **WIP on deeper technical issues**

For example currently GNOME Wayland does not show preëdit styling, needed by various IMEs

Also font configuration and caching has challenges in complexity and with sharing in certain environments, like containers



Thank you

What did I miss?

<https://petersen.fedorapeople.org/talks/gnome-asia-2025-fedora-ws-i18n.pdf>

# Fedora i18n Project

Matrix: `#i18n:fedoraproject.org`

(upstream: `#i18n:gnome.org`)

`i18n-bugs@lists.fedoraproject.org`

`i18n@lists.fedoraproject.org`

<https://www.fedoraproject.org/wiki/I18N>

<https://petersen.fedorapeople.org/talks/gnome-asia-2025-fedora-ws-i18n.pdf>