

# DOCUMENTING HOW TO CONFIGURE RED HAT ENTERPRISE LINUX OS FOR ACCESSIBILITY

#### Marie Doleželová

mdolezel@redhat.com 14.6.2017

#### PURPOSE AND HOW IT IS ENSURED

To make RHEL 7 usable for visually-impaired persons

Ensured by **Orca sreen reader** (https://help.gnome.org/users/orca/)

2 ways how Orca reads information from the screen and communicates it to the user

- speech synthesizer (speech output)
- braille display (tactile output)



#### **ORCA**

- Open source screen reader
- Works well with Gnome 3.x desktop
- Orca 3.24.0 the most recent version

- To turn on:
  - Desktop: settings / universal access
  - Terminal: orca
  - Key combination: Super + Alt + S



#### WHAT DOES ORCA ENABLE?

- Read documents
  - By signs
  - By words
  - By rows
  - Others (e.g. fluent reading; various key combinations)
- Read tables
- Fill forms
- Explore content of web pages

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#### SPEECH SYNTHESIZERS

- eSpeak speech synthesizer (default setting)
  - artificial synthesis
  - negative: "robotic" sound
  - positive: lower system load (CPU, RAM), better understandable in higher speed, more languages
- Festival Speech Synthesis System
  - synthesized from real voices
  - positive: more realistic sound (more human-like)
  - negative: less languages and voices



#### **BRAILLE DISPLAY**

 electro-mechanical device for displaying braille characters; round-tipped pins raised through holes in a flat surface





#### **DOCUMENTATION FOR SYSADMINS**

Defined user story:

As a system administrator, I want to configure RHEL so that it is accessible for visually-impaired users.

- Together with engineers, I found necessary tasks and described them.
  - 1. Introduction
  - 2. Configure britty service
  - 3. Switch on Universal Access Menu to be always visible
  - 4. Enable Festival



#### 1. INTRODUCTION

- What is Orca screen reader.
- Reference to Orca documentation rather for users than from sysadmins (how to set and use Orca, how to execute various tasks)
- Overview of steps to configure RHEL for accessibility.



#### 2. CONFIGURE THE britty SERVICE

Necessary so that the braille display can work.

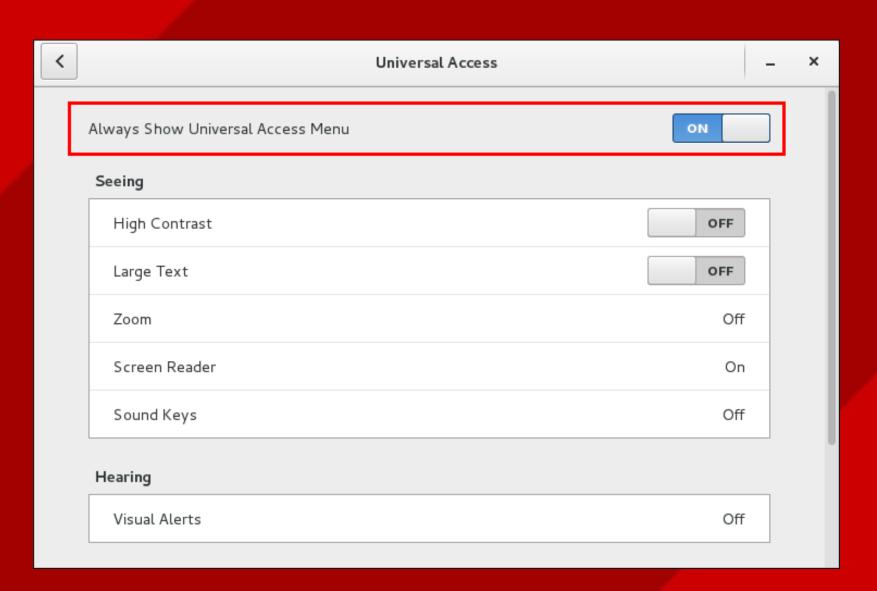
- Enable the service (disabled by default)
- Authorize user(s) to use the service
- Set various directives in the /etc/brltty.conf configuration file. (e.g. set the braille-driver or set the braille device (USB, serial, bluetooth))



## 3. SWITCH ON ALWAYS SHOW UNIVERSAL ACCESS MENU

- General behavior of Orca:
  - turned on by Super + Alt + S
  - -> icon on the top bar 🔀
- To have the icon visible in such circumstances:
  - Switch on Always Show Universal Access Menu.







### 4. ENABLE THE FESTIVAL SPEECH SYNTHESIS SYSTEM

- only eSpeak speech synthesizer by default
- Some user might prefer Festival (various reasons)
- To ensure that Festival can be used:
  - 1. Install Festival
  - 2. Make Festival running on boot (4 steps)



#### RESOURCES

https://help.gnome.org/users/orca/ (about Orca screen reader)

https://access.redhat.com/documentation/en-US/Red\_Hat\_Enterprise\_Linux/7-Beta/html/System\_Administrators\_Guide/index.html (Accessibility chapter in Red Hat System Administrator's Guide)





### THANK YOU