Oracle Linux 8
Accessibility User's Guide

ORACLE®

Oracle Linux 8 Accessibility User's Guide,

F30129-12

Contents

Preface

The Oracle Linux 8: Accessibility User's Guide describes the accessibility features that are available in the Oracle Linux operating system.

Documentation License

The content in this document is licensed under the Creative Commons Attribution–Share Alike 4.0 (CC-BY-SA) license. In accordance with CC-BY-SA, if you distribute this content or an adaptation of it, you must provide attribution to Oracle and retain the original copyright notices.

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at https://www.oracle.com/corporate/accessibility/.

For information about the accessibility of the Oracle Help Center, see the Oracle Accessibility Conformance Report at https://www.oracle.com/corporate/accessibility/templates/t2-11535.html.

Access to Oracle Support for Accessibility

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit https://www.oracle.com/corporate/accessibility/learning-support.html#support-tab.

Diversity and Inclusion

Oracle is fully committed to diversity and inclusion. Oracle respects and values having a diverse workforce that increases thought leadership and innovation. As part of our initiative to build a more inclusive culture that positively impacts our employees, customers, and partners, we are working to remove insensitive terms from our products and documentation. We are also mindful of the necessity to maintain compatibility with our customers' existing technologies and the need to ensure continuity of service as Oracle's offerings and industry standards evolve. Because of these technical constraints, our effort to remove insensitive terms is ongoing and will take time and external cooperation.

1
Working With Accessibility Features in Oracle Linux 8

Accessibility features offer users with vision, hearing, and motor impairments ways to more easily use the Oracle Linux desktop. This guide provides information about enabling and configuring the accessibility features that are included in Oracle Linux 8.

Selecting a Desktop Version

Oracle Linux8 offers both the Standard and Classic GNOME desktop. When you install Oracle Linux by using the Server With GUI profile or environment, the Standard GNOME desktop is selected by default. However, you can select another desktop version if preferred.

To view the desktop versions or switch between versions, do the following:

1. Ensure that you're logged out of the Oracle Linux 8 session.
2. Click the login username.
3. Click the cogwheel next to the **Sign In** button.

   The list of desktop versions is displayed.
4. (Optional) Select a desktop version.
5. Continue logging in to the server.

The desktop selection becomes a persistent setting and applies to all authorized users of the system.

About Assistive Technologies

Assistive technologies promote accessibility for users with specific impairments.

Alternative presentations that are provided for these users include the following:

- Synthesized speech
- Magnified content
- Alternative input methods
- Additional navigation methods
- Content transformations

Software features of Oracle Linux enable users with physical impairments to use all of the functionality of the desktop. Various desktop tools also enable you to customize the desktop's appearance and behavior.

> **✏ Note:**
>
> Anaconda installation software for Oracle Linux 8 doesn't provide any
> accessibility features.

Accessing Assistive Technologies

In Oracle Linux, the assistive technologies are listed on the **Universal Access** panel
of the GNOME desktop's **Settings** window. Accessing the panel differs slightly
between Standard and Classic desktops. However, the feature descriptions and
configuration procedures are the same for both. This document assumes that you're
using the default (Standard) desktop on the system.

Using the Standard Desktop

Choose one of the following methods:

- Accessing through the **System Tools** group icon

  The **System Tools** group icon consists of the 3 icons at the right side of the top
  bar of the screen. See the icons boxed in red in Figure 1-1.

  1. On the right side of the top bar, click **System Tools**.

  2. Click **Settings**.

  3. From the list of options on the left panel, select **Universal Access**.

- Accessing through the **Activities** menu option

  1. On the top bar, click **Activities**.

  2. On the search field, type `universal access.`

  3. From the list of options on the left panel, select **Universal Access**.

- Accessing through the command line

  1. Select the Terminal icon at the bottom of the screen.

     If the icon isn't visible, click **Activities**, then select the icon.

  2. On the terminal window, type:

     ```
     gnome-control-center universal-access
     ```

  3. From the list of options on the left panel, select **Universal Access**.

Using the Classic Desktop

Choose one of the following methods:

- Accessing through the **System Tools** group icon

  The **System Tools** group icon consists of the 3 icons at the right side of the top
  bar of the screen. See the icons boxed in red in Figure 1-1.

  1. On the right side of the top bar, click **System Tools**.

  2. Click **Settings**.

   3. From the list of options on the left panel, select **Universal Access**.

- Accessing through the **Applications** menu option

   1. On the top bar, click **Applications**, select **System Tools**, then select **Settings**.

   2. From the list of options on the left panel, select **Universal Access**.

- Accessing through the command line

   1. On the top bar, click **Applications**, select **Favorites**, then select **Terminal**.

   **2.** Type the following command:

   ```
   gnome-control-center universal-access
   ```

   3. From the list of options on the left panel, select **Universal Access**.

Configuring Quick Access

Oracle Linux provides a **Universal Access Menu**, which enables you to access and configure accessibility features without the need to open the **Universal Access** panel. This menu is disabled by default. To make the menu available, open the **Universal Access** panel and set the **Always Show Universal Access Menu** switch to **On**. Toggling this switch makes the **Universal Access Menu** icon become permanently visible on the top bar of the desktop.

Clicking the icon opens a list of accessibility features, as shown in the following figure:

Figure 1-1   Desktop Accessibility Features
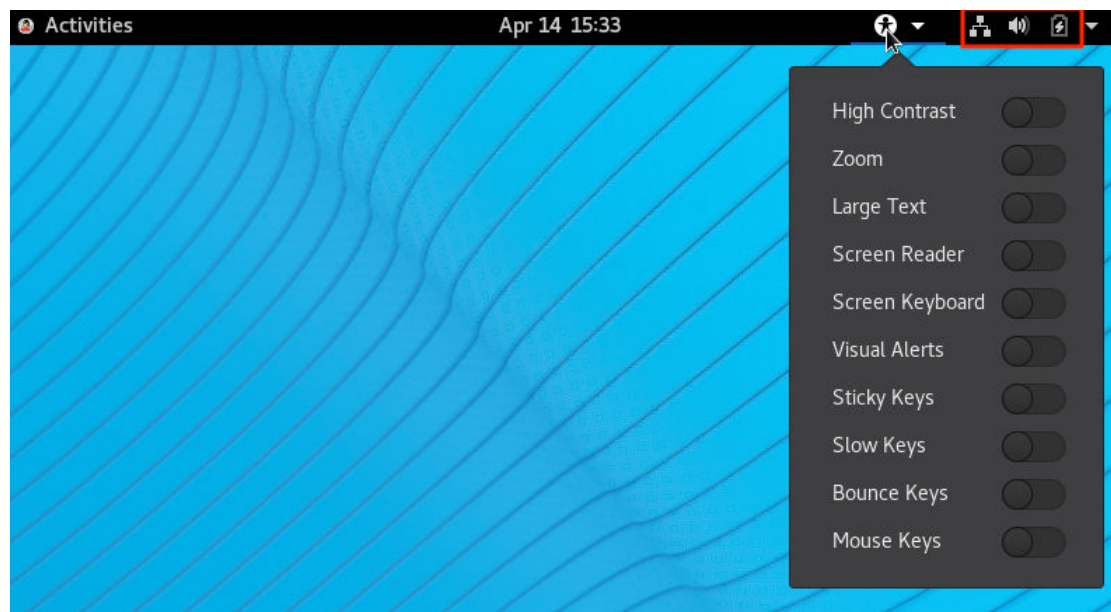
> **✎ Note:**
>
> Enabling selected features in the **Universal Access** panel also automatically enables quick access, even if the **Always Show Universal Access Menu** switch is disabled. However, in this case, if you switch off all of the enabled features through quick access, then the quick access icon disappears from the top bar.
>
> Toggling the **Always Show Universal Access Menu** switch ensures that quick access is available permanently regardless of whether assistive features are enabled or not.

2

Overview of Accessibility Features

In the GNOME desktop, features for aiding users with impairments are configured from the **Universal Access** panel.

On the panel, accessibility features are listed according to groups.

- **Seeing**

  Includes accessibility features and options for users with visual impairments. You can enable and customize the following settings:

  High Contrast
  Adjusts the contrast of windows and buttons on-screen so they are more or less vivid.

  Large Text
  Enlarges the font so that it's more readable.

  Cursor Size
  Increases and decreases the mouse cursor size.

  Zoom
  Magnifies text so that it's more readable.

  Screen Reader
  Reads aloud screen content to supplement visual reading. For details, see Configuring the Screen Reader.

  Sound Keys
  Beeps when the `Num Lock` or `Caps Lock` key is turned on or off.

- **Hearing**

  Includes the **Visual Alerts** option to aid those with hearing impairments. When enabled, the option provides a visual indication when an alert sound occurs. Available options include: **Flash the window title** and **Flash the entire screen**.

- **Typing**

  Includes accessibility features and options for users with mobility impairments. You can enable and customize the following settings:

  Screen Keyboard
  Enables desktop navigation and application use without a physical keyboard.

  Repeat Keys
  Specifies that the keyboard not repeat letters when a key is held down. This setting also enables you to change the delay and speed of repeat keys.

  Cursor Blinking
  Causes the cursor to blink in text fields when enabled.

Typing Assist (AccessX)

Opens a submenu that contains more keyboard settings. For details, see Configuring Typing Assist.

- **Pointing & Clicking**

    Includes accessibility features and options for users with motor impairments that render using a mouse or any pointing device difficult.

    Mouse Keys

    Enables you to control the mouse pointer by using the numeric keypad on your keyboard.

    Click Assist

    Opens a submenu that contains more settings for clicking the mouse. For details, see Configuring Click Assist.

    Double-Click Delay

    Enables you to adjust the length of time to delay the double-click action.

For more information about universal access in the GNOME desktop, go to https://help.gnome.org/users/gnome-help/stable/a11y.html.

3

Customizing Accessibility Features

Accessibility features already have preconfigured settings so that they're immediately usable after an Oracle Linux installation. However, some of these features can be customized according to preferences. This chapter describes these features that you can further enhance. When you enable a feature after reconfiguring it, the new settings are applied.

Configuring the Screen Reader

Oracle Linux provides Orca as its default on-screen reader. The `orca` package is installed on the Oracle Linux 8 system by default. When enabled, the Orca screen reader speaks text as you move the focus of the cursor on-screen.

Configurable Settings of the Screen Reader

The **Screen Reader Preferences** window contains the following tabs, each of which has a list of customizable settings:

General
Configures how Orca behaves.

Voice
Determines the voice that Orca uses when reading the screen.

Speech
Defines what the reader reads aloud and the degree of verbosity.

Braille
Configures Orca Braille display support.

Key Echo
Defines what the reader reads aloud while you type.

Key Bindings
Defines keyboard shortcuts for Orca.

Pronunciation
Configures word pronunciation.

Text Attributes
Configures text formatting.

Customizing the Screen Reader

1. Type the following command:

   ```
   orca -s
   ```

   The `-s` option can also be typed as `--setup`. The command opens the **Screen Reader Preferences** window.

2. Customize the reader according to specific needs.

Click each tab to configure the different options on those tabs.

For Braille configuration, see Using Braille.

> ✎ **Note:**
>
> When you open the **Screen Reader Preferences** window, the screen reader is temporarily enabled and any action you perform on the desktop is read aloud. When you exit the window, the screen reader is switched off.

3. Click **Apply**, then click **OK**.

4. At the command line, press Ctrl-C to return to the command prompt.

5. Enable the screen reader by using either the **Universal Access** panel or, if available, the quick access icon on the desktop's top bar.

Configuring the Magnifier

Zoom is the default magnifier that's included in the GNOME desktop for Oracle Linux 8.

Configurable Settings of the Magnifier

The **Zoom Options** window contains the following tabs, each of which has a list of customizable settings:

Magnifier
Configures magnification and magnifier cursor behavior.

Crosshairs
Configures cross hair appearance, including color.
Note that to use **Crosshairs**, you would need to toggle the feature's switch on this tab to **ON**. However, the crosshairs appear only if you also enable Zoom.
To use the magnifier but not the crosshairs, you would need to return to this window to disable the feature.

Color Effects
Configures the display of colored content.

Customizing the Magnifier

1. Access the **Universal Access** panel by using a preferred method.

   See Accessing Assistive Technologies.

2. From the list of options on the panel, select **Zoom**.

   The **Zoom Options** window is displayed.

3. Customize the magnifier according to your preferences.

   Click each tab to configure the different options on those tabs.

4. (Optional) Toggle the magnifier switch to **ON** to use the feature immediately.

   You can also enable the magnifier later through the **Universal Access Menu** icon on the desktop's top bar.

For more information about customizing the magnifier, go to https://help.gnome.org/users/gnome-help/stable/a11y-mag.html.en.

Configuring Typing Assist

Typing Assist consists of several assistive technologies for using the keyboard.

Configurable Settings of Typing Assist

Typing Assist is one of the features under the **Typing** group. The settings include the following:

Enable By Keyboard
Enables keyboard control to navigate the desktop instead of using a mouse.
For help with using keyboard navigation, see https://help.gnome.org/users/gnome-help/stable/shell-keyboard-shortcuts.html.en.

Sticky Keys
Enables shortcut keys to be typed in sequence instead of one key being held before the other key is pressed.

Slow Keys
Controls the delay between a key being typed and the corresponding character being displayed on-screen.

Bounce Keys
Enables ignoring fast and repetitive pressing of keys.

Except for **Enable By Keyboard**, the settings can be enabled through the **Universal Access Menu** icon on the desktop's top bar.

Customizing Typing Assist

1. Access the **Universal Access** panel by using a preferred method.

   See Accessing Assistive Technologies.

2. Under the **Typing** group, select **Typing Assist (AccessX)** .

   The **Typing Assist** window is displayed.

3. Customize the settings for key behavior according to your preferences.

For more information about customizing **Typing Assist**, go to https://help.gnome.org/users/gnome-help/stable/keyboard.html.en.

Configuring Click Assist

Click Assist consists of several assistive technologies for using the mouse or other pointing devices.

Configurable Settings of Click Assist

Click Assist is one of the features under the **Point & Clicking** group. The settings include the following:

Simulated Secondary Click
Triggers a secondary click when you hold the primary button, which causes the equivalent action of double-clicking.

Hover Click
Triggers a click when you hover over a specific screen location, which causes the equivalent action of clicking or selecting.

Customizing Click Assist

1. Access the **Universal Access** panel by using a preferred method.

   See Accessing Assistive Technologies.

2. Under the **Pointing & Clicking** group, select **Click Assist**.

   The **Click Assist** window is displayed.

3. Customize the settings for mouse click behavior according to set preferences.

For more information about configuring Click Assist, go to https://help.gnome.org/users/gnome-help/stable/mouse.html.en.

4

Using Braille

Braille support is included in the GNOME desktop's accessibility features. Likewise, the `brltty` daemon that's running as a background process enables users to access information on Braille display devices.

Configuring Braille Options on the Screen Reader

The GNOME desktop's **Screen Readers Preference** window contains a page for Braille configuration.

Configurable Braille Settings on the Screen Reader

On the Braille page, you can configure the following settings:

Display Settings
Defines how Braille is displayed.

Verbosity
Determines the amount of information that is rendered in Braille.

Selection and Hyperlink Indicators
Defines how selected text and hyperlinks are displayed.

Flash Message Settings
Enables notifications and configures how these notifications are handled.

For more information about configuring Orca's Braille options, go to https://help.gnome.org/users/orca/stable/preferences_braille.html.en.

Customizing Braille on the Screen Reader

1. Type the following command:

   ```
   orca -s
   ```

   The `-s` option can also be typed as `--setup`. The command opens the **Screen Reader Preferences** window.

2. Click the **Braille** tab.

3. Customize the Braille options according to user needs.

4. Enable the screen reader by using either the **Universal Access** panel or, if available, the quick access icon on the desktop's top bar.

> **✎ Note:**
>
> If you change settings in `/etc/brltty.conf`, then you must also restart Orca. To configure `/etc/brltty.conf`, see Configuring the BRLTTY Service.

Configuring the BRLTTY Service

Support for a Braille device is provided by the BRLTTY daemon (`brltty`). You configure this service through the `/etc/brltty.conf` configuration file.

> **Note:**
>
> The `brltty` service isn't available by default. To use this service you must install the `brltty` package.

Configurable Settings of the brltty Service

The following are a selection of configurations that you can set in `/etc/brltty.conf`:

*   Authorize users who can use the Braille device.

    Specify the users on the line `#api-parameters Auth=user:`, for example:

    ```
    api-parameters Auth=user:jsmith, jdoe, bbrown
    ```

*   Authorize groups who can use the Braille device.

    Specify the groups on the line `#api-parameters Aut=group:`. For example, for a group called `braille`, you would enter:

    ```
    api-parameters Auth=group:braille
    ```

*   Indicate the Braille display device driver.

    Uncomment the appropriate `#braille-driver` line that contains your selected driver. Drivers are identified by two-letter codes, which are provided in the configuration file, for example:

    ```
    braille-driver vo
    ```

    On a single `braille-driver` line, you can specify multiple, comma-separated drivers. In this case, the service automatically scans the list and detects the appropriate driver.

*   Indicate the type of Braille display device.

    Uncomment the appropriate `#braille-device` line that contains your selected device. Several lines that correspond to specific device types are provided, for example:

    ```
    braille-device bluetooth:address
    ```

    On a single `braille-device` line, you can specify multiple, comma-separated devices. In this case, the service automatically scans the list and detects the appropriate device.

Using the brltty Service

1. Install the `brltty` package.

    ```
    sudo dnf install -y brltty
    ```

2. Configure settings in `/etc/brltty.conf` as needed.

3. Enable the `brltty` service.

```
sudo systemctl enable brltty
```

4. If prompted, type the user password.

5. Reboot the system.

6. After the system reboots, verify that the service is running, as follows:

```
sudo systemctl status brltty

* brltty service - Braille display driver for Linux/Unix
   Loaded: loaded (/usr/lib/systemd/system/brltty.service; enabled; vendor preset:
disabled
   Active: active (running) since Wed 2020-04-15 12:07:48 PDT; 25min ago
...
```

> **Note:**
>
> If you change settings in `/etc/brltty.conf`, then you must also restart Orca. To configure Braille options in the Screen Reader, see Configuring Braille Options on the Screen Reader.

For more information, see the `brltty(1)` manual page.