Take a screenshot on your device

You can capture your phone or tablet's screen as an image by taking a screenshot. Then you can view, edit, and share the image from your mobile device.

Take a screenshot

To capture your screen as an image on your phone or tablet:

1. Open the screen that you want to capture.
2. Press and hold the **Power** and **Volume down** buttons at the same time for a few seconds. Your device will save the screen as an image.
3. At the top of the screen, you'll see the Screenshot capture .

Tip: If you don't see the Screenshot capture icon, return to a Home screen to see it.

View your screenshot

To see the screenshot you just took

1. Swipe down from the top of a screen with the Screenshot capture .
2. Tap the "Screenshot captured" notification.

To see all your screenshots

View screenshots on Android 5.0 and up

1. Open your device's Photos app .
2. Tap Menu .
3. Tap **Device folders**.
4. Look under "Screenshots."

View screenshots on Android 4.4 and below

1. Open your device's **Gallery** app.
2. Choose the "Album" view and look in the "Screenshots" folder.

Share your screenshot

To share a screenshot, view it and tap **Share** .

Related links

- Edit photos with the Photos app
- Find things in photos with the Photos app

Use Android Beam to share content by NFC

With Android Beam turned on, you can share content directly from your device's screen to another device by bringing the devices together (usually, back to back). You can beam content including webpages, directions, videos, photos, and contacts.

To share content by beam, both devices must support "Near Field Communication" (NFC), have both NFC and Android Beam turned on, and be unlocked with their screens on.

> **Note**: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 6.0 and up. See what version of Android you have.

Make sure NFC and Android Beam are on

Both NFC and Android Beam are turned on by default. To check that they're on:

1. Open your device's **Settings** app ⚙.
2. Under "Wireless & networks," tap **More**.
3. Check that **NFC** is switched on. This lets your phone exchange data when it touches another device.
4. Tap **Android Beam**.
5. Check that the **On**/**Off** switch is on.

You can also turn off NFC or Android Beam with these settings at any time.

Share content by Android Beam

Before sharing content, make sure that both devices are unlocked, have their screens on, and have NFC and Android Beam turned on. Then follow these steps:

1. On your device, open the exact content that you want to share, like a map, photo, or webpage.
2. Move the back of your device toward the back of the other device.
3. When the devices connect, your device will make a sound or vibrate, and the image on your screen will get smaller.
4. When you see the message **Touch to beam**, tap your screen. A notification will say "Beaming..."
5. When the beam is done:
   - On your device, a notification will say "Beam complete."
   - On the other device, a notification will show the shared content.

When the other device needs an app

If the other device doesn't have the app needed to see the shared content, then the notification on the other device will open Google Play, where the other device can download that app.

Where to touch backs for Android Beam

With some devices, you may need to touch a specific part of your device to the other device.

- For a Nexus 7, make sure that the other device touches its back near the "u" in "Nexus."
- For the HTC One Google Play edition, place the HTC logo against the lower part of the other device.

For the exact location of your NFC antenna, see these Nexus device diagrams.

Related links

- Tap & pay with your device
- Transfer files between your computer and Android device

Tap & pay with your device

You can use tap & pay with your compatible Android device to pay for purchases at thousands of merchants that accept contactless payments.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 4.4 and up. See what version of Android you have.

Set up tap & pay on your device

To use tap & pay, you'll first need to to turn on NFC (near field communication).

1. Open your device's **Settings** app .
2. Under "Wireless & networks," touch **More**.
3. Switch on **NFC**. If you don't see the NFC setting, your device doesn't have NFC and you won't be able to tap & pay.

Manage apps using tap & pay

There are many payment apps that let you tap and pay. You can browse Google Play for payment apps.

Set a default payment app

If you have multiple apps that use tap & pay, you can choose which one to use by default when you tap and pay at a store.

1. First, open the payment app and make sure tap & pay is turned on.
2. Then, open your device's **Settings** app . Scroll down to **Tap & pay** and select your default payment app.

Note: Your payment apps need to support the tap & pay functionality in order to show up in settings. Money transfer apps and Android Beam aren't supported.

Turn off tap & pay

You can turn off tap and pay in two ways:

- Turn off the tap & pay functionality in your payment app. Not all payment apps support this option.
- Turn off NFC on your device by going to **Settings** > **More** (under "Wireless & networks") > switch off **NFC**. Keep in mind that turning off NFC also turns off Android Beam and other NFC features.

Related links

- Get started with Android Pay
- Make purchases with Android Pay

Transfer files between your computer and Android device

You can transfer photos, music, and other files between your computer and device with a USB cable. You can also transfer files from your device to a computer.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 4.4 and up. See what version of Android you have.

Transfer files

Windows transfer

1. Unlock your device's screen.
2. With a USB cable, connect your device to your computer.
3. Swipe down from the top of your device's screen to see your notifications.
4. Tap the **USB for...** notification. Then tap **Transfer files (MTP)**.
5. A File Transfer window will open on your computer. Use it to drag and drop files, just like with other external devices and storage.
6. When you're done, eject your device from Windows.
7. Unplug the USB cable.

Mac transfer

To transfer files, you must have Android File Transfer installed on your computer. Android File Transfer is compatible with Mac OS X 10.5 or later and Android 3.0 or later.

1. Download and install Android File Transfer on your computer.
2. Open **Android File Transfer**. (The next time that you connect your device, it should open automatically.)
3. Unlock your device's screen.
4. With a USB cable, connect your device to your computer.
5. Swipe down from the top of your device's screen to see your notifications.
6. Tap the **USB for...** notification. Then tap **Transfer files (MTP)**.
7. An Android File Transfer window will open on your computer. Use it to drag and drop files.
8. When you're done, unplug the USB cable.

Manage your music

You can upload music on your computer to your Google Play library using Music Manager. Learn how to get started with Google Play Music or add your music using Music Manager.

Troubleshoot transferring files through USB

If you're having trouble transferring files:

- Try a different USB cable. Not all USB cables can transfer files.
- Test the mini-USB port on your device by connecting your device to a different computer.
- Test the USB port on your computer by connecting a camera or other device with USB.
- Update your Android version to the latest available.
- Reboot your device by pressing the Power button for about 30 seconds, until your device restarts.
- Restart your computer.

Windows troubleshooting

Check your computer's settings to make sure that Windows automatically detects new hardware.

Mac troubleshooting

- Make sure that Android File Transfer is compatible with your computer. You must have Mac OS X 10.5 or later and Android 3.0 or later. See what version of Android you have.
- Make sure that the Android File Transfer application is open.

Related links

- Find & delete downloads
- Add or import contacts
- Transfer music from a computer to your device
- Use Android Beam to share content by NFC

Print from your Nexus device

You can print from your Nexus phone or tablet with apps that support printing. To print from your device, add a printer that can receive data by Wi-Fi or cellular network.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 4.4 and up. See what version of Android you have.

Turn printing on or off for your Nexus device

1. Open your device's Settings app ⚙.
2. Under "System," tap **Printing**.
3. Tap a print service and then tap its **On/Off** switch.

See and add printers for your Nexus device

Use Google Cloud Print on Nexus

To see and choose from available printers:

1. Open your device's Settings app ⚙.
2. Scroll down and tap **Printing**.
3. Tap **Cloud Print**.

To add a printer or manage print settings, tap More ⋮.

You can learn more about using Google Cloud Print.

Add and use a new print service on Nexus

To add a new print service:

1. Open your device's Settings app ⚙.
2. Under "System," tap **Printing**.
3. Tap **Add service**.
4. Enter the printer information.

To use a new print service after adding it:

1. Open your device's Settings app ⚙.
2. Under "System," tap **Printing**.
3. Tap the print service, like **HP Print Service Plugin**.

To manage print settings, tap More ⋮.

Print from apps on a Nexus device

How to print depends on the app from which you're printing. Often, you can tap Menu ☰ or More ⋮, and then tap **Print**.

Not all apps support printing. You can always take a screenshot of an app's screen and then print the screenshot.

Related links

- How to print from Gmail
- How to print from Google Calendar
- How to print from Google Docs, Sheets, and Slides

Type text by speaking

On your mobile device, you can speak to enter text in most places where you can enter text with the onscreen keyboard.

Use your voice to type text

1. Touch where you want to type.
2. In the onscreen keyboard, touch the Microphone key .
3. When you see the microphone image, speak what you want to type. Say "comma," "period," "question mark," "exclamation mark," or "exclamation point" to enter punctuation.
4. When you pause, your device's speech-recognition service transcribes what you said into words in the text field. What you said last will be underlined.
5. To delete what you last said, touch **Delete** .

How we improve voice input recognition

To improve how well your device recognizes what you say, Google may record a few seconds of ambient background noise in your device's temporary memory at any time. This recording isn't stored on your device and isn't sent to Google.

Use Gesture Typing

With Google Keyboard, you can enter words by sliding your fingers from letter to letter and choosing the suggested words. This is known as Gesture Typing.

How to use Gesture Typing

1. To open the keyboard, touch where you want to type.
2. On the keyboard, slide your finger across the letters of the word you want. As you slide your finger, words will appear at your fingertip.
3. To enter your word, lift your finger.
4. To enter your next word, slide your finger across its letters. (You don't need to touch the space bar between words.)

Replace words

To change a word you entered, touch it and then touch a word in the suggestion strip. You can also manually type changes.

See more suggestions

To see more words, touch and hold a word in the suggestion strip.

Enter double letters

If there's a double letter in your word, slide your finger over that letter as usual. You'll see suggestions with the double letter.

Turn Gesture Typing on or off

Gesture Typing is on by default. To turn it off or back on:

1. On your device, open the Settings app ⚙.
2. Scroll down and touch **Language & input**.
3. Touch **Google Keyboard**.
4. Touch **Gesture Typing**.
5. Switch **Enable gesture typing** on or off.

Manage Gesture Typing settings

To change the settings for Gesture Typing:

1. On your device, open the Settings app ⚙.
2. Scroll down and touch **Language & input**.
3. Touch **Google Keyboard**.
4. Touch **Gesture Typing**.
5. With "Enable gesture typing" switched on, change your settings:
   - **Dynamic floating preview**
     Choose to see the suggested word while gesturing.
   - **Show gesture trail**
     Choose to see the trail of your finger on the keyboard.

Languages for Gesture Typing

You can use Gesture Typing in many languages. Not all Google Keyboard languages work with Gesture Typing.

List of languages with Gesture Typing

- Croatian
- Czech
- Danish
- Dutch
- English
- Finnish
- French
- German (Germany and Switzerland)
- Greek
- Hebrew
- Italian
- Latvian
- Lithuanian
- Norwegian
- Polish
- Portuguese (Brazil and Portugal)
- Romanian
- Russian
- Serbian
- Slovenian
- Spanish
- Swedish
- Turkish

Set up a screensaver

Your Android phone or tablet can show photos, colorful backgrounds, a clock, and more when your device is charging or docked.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 6.0 and up. See what version of Android you have.

Turn your screensaver on or off

1. Open your device's **Settings** app.
2. Tap **Display** > **Daydream**.
3. At the top, tap the **On/Off** switch.

Set your screensaver

Step 1 of 3: Choose what your screensaver shows

In your device's **Settings** app > **Display** > **Daydream**, tap an option:

Clock

The Clock screensaver shows a digital or analog clock. To make your screen less bright, choose "Night mode."

To change your Clock screensaver settings: next to the clock option, tap Settings.

Colors

The Colors screensaver shows changing colors on your screen.

News & weather

The News & weather screensaver shows top news headlines.

Photos

The Photos screensaver shows your pictures from the Photos app. You can pick folders from your device, or other photos from your Google Account.

- **To pick which photos to show**
  Next to the Photos screensaver option, tap Settings .
- **To pick photos from your account**
  In the Photos screensaver option Settings, under "Google Accounts," tap your name.
- **Use Wi-Fi or cellular data**
  By default, the Photos screensaver uses only Wi-Fi to load photos. You can change this in the Photos screensaver option Settings, at the top.

Other apps

If you've downloaded an app that works with the screensaver, you'll see it with the standard options.

Step 2 of 3: Choose when your screensaver shows

Your phone or tablet can use a screensaver when your device is charging, docked, or both. Docked means that your device is connected to a dock, a type of phone accessory.

1. While on the screensaver settings page, tap More ⋮ > **When to daydream**.
2. Tap "While docked," "While charging," or "Either."

Step 3 of 3: Test your screensaver

To see what your screensaver will look like, tap More ⋮ > **Start now**.

Use your screensaver

After you've set your screensaver, your screensaver will start when your device goes into Sleep mode.

If you want to change how long it takes for your device to go into Sleep mode, open your device's **Settings** app > **Display** > **Sleep**.

Important: Your screensaver won't start if you turn off your device with the power button. Instead, leave your screen on so that your device goes into Sleep mode on its own.

Record and play back audio with USB host mode on Nexus

In USB host mode, you can record or play back audio using USB accessories, like headsets, microphones, audio interfaces, and dongles.

> This feature is available only on Nexus 5X, Nexus 6P, Nexus 5, Nexus 6, Nexus 7 (2013), Nexus 9, and Nexus 10 devices running Android 5.0 or higher.

What you can use USB host mode for

You can use USB host mode for:

- Audio recording
- Basic audio playback
- Telephone calls
- Video conferencing

Note: USB host mode doesn't work with a car's dock.

What you'll need to use USB host mode

To use USB host mode, you'll need:

- **OTG connector**
  Use a USB On the Go (OTG) connector to connect your audio accessory to your Nexus device. Micro-USB doesn't support USB host mode by itself.
- **Supported audio accessory**
  Android host mode for audio works with most USB audio class-compliant ("driverless") accessories.
- **Power**
  Make sure that your USB audio accessory has power. You may need a powered USB hub to power your USB audio accessory, so that your Nexus battery doesn't lose charge as quickly.

Use USB host mode for audio on your Nexus device

When you plug a USB audio accessory into your Nexus with an OTG connector, that accessory becomes the preferred device for input and output. You control the input and output through your Nexus device.

To use USB host mode for audio:

1. Plug the USB audio accessory into your Nexus device.
2. Your device will act as a host for input and output.
3. Follow the accessory's instructions for use.

Welcome to the Nexus Help Center

Find and open apps

Learn how to open apps on your device or get new apps from Google Play.

Open apps on your device

1. Get to your Home screen by touching Home ◯.
2. Near the bottom, touch All Apps ⋯.
3. Find an app and touch its icon to open it.

Tip: You can add apps to your Home screens so you can get to them quickly.

Switch between apps

You can jump from one app to another without going back to your Home screen:

1. In the bottom right corner, touch Overview ▢.
2. Touch the thumbnail image of the app you want to open.

Close apps

To exit an app, touch Home ◯. You'll return to your Home screen.

You can also close or quit an app if you need to:

1. In the bottom right corner, touch Overview ▢.
2. You'll see a list of apps that are running.
3. Swipe an app to the left or right to close it.

Note: Frequently closing apps can drain your battery faster. Try to only close apps that you don't use very often.

Get new apps

1. Open the **Play Store** app ▶.
2. Search or browse for an app.
3. Open the app's page and touch **Install**.

You can always uninstall an app from your device if you need to.

Related links

- Get help switching to Android
- Add apps & widgets to your Home screens
- Get started with your Nexus device

Find & delete downloads

On your Android device, you can usually find your downloads in the Downloads app.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 6.0 and up. See what version of Android you have.

Find & open your downloaded files

1. Open your list of apps .
2. Open the Downloads app .
   - To sort by name, date, or size, tap Sort by .
   - To open an item, tap it.

Delete your downloaded files

1. Open the Downloads app .
2. Touch & hold an item.
3. Tap Delete .

Share, print, save to Drive, and more

Here are a few things that you can do in the Downloads app :

- To share an item:
  1. Touch & hold the item.
  2. Tap Share .
- For other actions, like printing or adding to Google Drive:
  1. Tap an item to open it.
  2. In the top right corner, look for more options.

Music, movies, and other content

When you download content like music, TV shows, or books to use while you're offline, you'll find that content in the app where you downloaded it. For example, here's how to find content downloaded in the Google Play Movies & TV app.

You won't usually find downloaded content like music or movies in the Downloads app.

Transfer files to a computer

When your device is connected to a computer, look in the "Downloads" folder on the computer to see files available in the Downloads app on your device. You can view and copy files from this folder.

Get help with apps on your device

Clock

Contacts app

Gallery

Google apps on your device

How to use the Calculator app

Protect against harmful apps

Some apps can harm you or your device. We recommend downloading from trusted sources, like the Google Play Store.

If you'd like to download from outside Google Play, you can turn on app verification. This makes sure that apps are scanned for malware before and after you install them on your device.

Note: Some of this information may not apply to all devices because Android isn't exactly the same on every device. These instructions are for devices with Android 6.0 and up. See what version of Android you have.

App security on Google Play

The Google Play Store helps protect your device by blocking potentially harmful apps. Before an app is published to Google Play, it's reviewed to make sure it's not harmful.

Here are some tips to help you avoid harmful apps:

Tip 1: Review app reviews, star ratings, & download counts

Check app reviews and download counts to see what other people are saying about an app.

On the Play Store app

1. Open the Play Store app .
2. Visit the app's detail page.
3. Under the app title, review the star ratings and number of downloads.
4. To read individual reviews, scroll down.

On your computer

1. Go to Google Play .
2. Visit the app's detail page.
3. Under "Reviews," look at the star ratings and number of downloads.
4. Select individual reviews.

Tip 2: Report bad apps to Google

If you've found an app that you think is harmful, report it to us.

Download from sources other than Google Play

You can let your device download apps from sources other than Google Play by turning on the "Unknown sources" feature.

IMPORTANT: Your phone and personal data are vulnerable to attack by apps from unknown sources. If you download apps from unknown sources, be aware that your phone may be damaged or lose data.

1. Open your device's Settings app ⚙.
2. Under "Personal," tap **Security**.
3. Turn on **Unknown sources**.

Turn app verification on or off

The "Verify apps" feature regularly checks activity on your device and prevents or warns you about potential harm. If you have a device with multiple users, only the device's owner can turn verification on or off.

1. Open your device's Settings app ⚙.
2. Under "Personal," tap **Security**.
3. Under "Verify apps," turn **Scan device for security threats** on or off. When this setting is on, it regularly checks your device activity and prevents or warns about potential harm.

Ways your device warns you about potentially harmful apps

With "Verify apps" turned on, your device will check apps when you install them and periodically scan for potentially harmful apps.

Verify at app installation

With app verification turned on, when you try to install an app outside of Google Play, your device will do one of these things:

- Recommend that you don't install the app
- Block the installation of the app completely (if there's a security threat to your device)

When you try to install an app, your device may send information to Google identifying the app, including log information, URLs related to the app, device ID, your OS version, and IP address.

Scan for harmful apps on your device

When app verification is turned on, the installed apps on your device are periodically scanned. If a potentially harmful app is detected, "Verify apps" may take the following actions:

- Recommend that you immediately uninstall the app
- Remove an app that is known to be unsafe from your device

Improve harmful app detection

When you choose to verify apps, Google also receives anonymous information about any apps installed outside of the Google Play Store. This helps Google to better protect users against harmful apps.

To change this setting:

1. Open your device's Settings app ⚙️.
2. Under "Personal," tap **Security**.
3. Under "Device administrators," tap **Unknown sources**.

This feature may not apply to all apps. Some developers may choose to turn off this feature so that their apps aren't submitted for review.

Uninstall, disable, and delete apps

You can remove apps from your device if you don't want them anymore or you need to clear memory space. If you uninstall an app you paid for, you can reinstall it later without buying it again.

Uninstall or disable apps

1. Go to your device's **Settings** app .
2. Select **Apps** or **Application manager**.
3. Touch the app you want to uninstall. You may need to scroll to find the app.
4. Touch **Uninstall** or **Disable**.

Uninstall vs. disable

There are two ways to remove apps depending on whether you downloaded the app or if it came preinstalled on your device:

- **Uninstall downloaded apps**: If you downloaded an app from Google Play, you can completely remove it from your device.
- **Disable preinstalled apps**: Some apps come preinstalled on your device. You can disable these apps, but you can't remove them completely. After an app has been disabled, it will be hidden on your device.

Note: Disabling a system app may cause other apps to misbehave and will delete your associated data for that app.

Reinstall apps

If you uninstall or disable an app you can add it back to your device. If you bought an app you can add it again without buying it again. Visit reinstall and re-enable apps for more info.

Welcome to the Nexus Help Center

Wireless & connectivity settings

Connect to Wi-Fi networks
Connect to Bluetooth
Connect to cellular networks
Control airplane mode & other network settings
Connect to virtual private networks (VPNs)
Reduce and manage data usage
Tether with Wi-Fi hotspot, Bluetooth, or USB
Connect to keyboards, mice, & other devices
Bluetooth profiles for Nexus devices

Device settings

Manage your battery

Check battery level
Use battery saver mode
Get the most life from your battery
Stretch a low battery's power
Keep battery optimization on

Manage display settings

Manage screen and display settings
Project your Android device's screen
Change the wallpaper
Set up a screensaver

Sound and vibrate settings

Change volume, sound & vibrate settings
Change call settings

Security settings

Protect your device

Security settings
Make sure your device is protected
Protect against harmful apps
Encrypt your data
Work with certificates
Warning about operating system safety
Pin and unpin screens

Lock and unlock

Set screen lock
Unlock with your fingerprint
Set automatic unlock with Smart Lock for Android
Sync passwords across your devices

Find your device with Android Device Manager

Turn Android Device Manager on or off
Find your device using Android Device Manager
Remotely ring, lock, or erase a lost device

Account and location settings

Add or remove an account

Back up or restore data on your device

Sync your apps with your Google Account

Manage guests and users

Manage Location settings for your device and apps

Notification and interruption settings

View and use notifications

Silence your device with "Do not disturb"

Notification settings

App settings

Set or clear default apps

Check or change app settings

Welcome to the Nexus Help Center

Use your Nexus 9 keyboard

Charge your Nexus 9 keyboard

Pair your Nexus 9 keyboard

Set up your Nexus 9 keyboard

Use Nexus 9 keyboard shortcuts

Android device cases

Set up your Live Case

Specs: Google-branded cases for Nexus 7 (2013)

Nexus Wireless Charger

How to use the Nexus Wireless Charger

Nexus Wireless Charger: Safety & Regulatory Information

Nexus Wireless Charger Tech Specs

Welcome to the Nexus Help Center

+ About Nexus devices
+ Get started with your Nexus device
+ Explore your Nexus device
+ Use your apps
+ Settings
+ Accessories

- **Device support**

  Accessibility in Android devices

  Troubleshoot issues

  Get support and tips with Device Assist

  Warranty information

  Android and Nexus User Guides

  Send feedback about your device to Google

Welcome to the Android Accessibility Help Center

- **Get started**

  Android accessibility features

+ TalkBack screen reader for Android

+ Braille support for Android with BrailleBack

+ Control Android by voice with Voice Access

+ Switch access for Android

+ More Android accessibility features

+ Support and updates

Android accessibility features

Android accessibility features and apps enable you to customize your Android device to suit your needs. A brief summary of features is below, along with links to more information.

Services and tools for using your Android device

- **Screen reader (TalkBack):** TalkBack is a screen reader that's included on your Android device. TalkBack uses spoken feedback to describe your actions and to tell you about alerts and notifications. Learn more about TalkBack.
- **Switch access:** Switch access enables you to control your device with one or more switches. For users with limited mobility, switch access provides an alternative to using the touch screen. Learn more about switch access. (Android 5.0+)
- **Voice Access:** Voice Access is an accessibility service that lets you control your Android device with your voice. Using spoken commands, you can activate on-screen controls, launch apps, navigate your device, and edit text. Voice Access can be helpful for users for whom using a touch screen is difficult. Learn more about Voice Access. (Android 5.0+)
- **Braille support (BrailleBack):** BrailleBack is an add-on accessibility service that lets you connect a supported refreshable braille display to your Android device via Bluetooth. BrailleBack works with TalkBack for a combined speech and braille experience, allowing you to input text and interact with your Android device. Learn more about BrailleBack.

Settings to customize your Android device

The following settings are available in **Settings > Accessibility**. Follow the links to find detailed information about each setting.

- Captions (Android 4.4+)
- Magnification gestures
- Large text
- High-contrast text (Android 5.0+)
- Power button ends call
- Auto-rotate screen
- Speak passwords
- Accessibility shortcut
- Text-to-speech output
- Touch-and-hold delay
- Color inversion (Android 5.0+)
- Color correction (Android 5.0+)

Developer resources

Learn how to make your app more accessible with Android Accessibility developer resources.

Welcome to the Android Accessibility Help Center

+ Get started

- **TalkBack screen reader for Android**

  - Get started on Android with TalkBack
  - Turn on TalkBack
  - Explore by touch in TalkBack
  - Get to know your Home screen with TalkBack
  - Use TalkBack gestures
  - Get started with Android and TalkBack settings
  - Answer and hang up calls with TalkBack
  - Use TalkBack to browse the web with Chrome
  - Use global and local context menus
  - TalkBack keyboard shortcuts
  - Learn about all TalkBack settings
  - Disable TalkBack

+ Braille support for Android with BrailleBack

+ Control Android by voice with Voice Access

+ Switch access for Android

+ More Android accessibility features

+ Support and updates

Get started on Android with TalkBack

TalkBack is the Google screen reader included on Android devices. TalkBack gives you spoken feedback so that you can use your device without looking at the screen.

The help pages listed below will guide you as you learn how to use your Android device with TalkBack.

1. Turn on TalkBack
2. Explore by touch
3. Get to know your Home screen
4. Use TalkBack gestures
5. Get started with Android and TalkBack settings
6. Answer and hang up calls
7. Use TalkBack to browse the web with Chrome
8. Use global and local context menus
9. Use TalkBack keyboard shortcuts
10. Learn about all TalkBack settings
11. Disable TalkBack

Note: The setup of your device depends on various factors, such as the device manufacturer, Android version, and TalkBack version. The information in these help pages applies to most devices, but you might experience some differences.

Turn on TalkBack

You can turn on TalkBack when you turn on your Android device for the very first time. You can also turn on TalkBack at any time after you've begun using your device.

Once you turn on TalkBack, spoken feedback starts immediately. As you navigate your device, TalkBack describes your actions and alerts you about notifications and other information.

Option 1: Turn on TalkBack when you first turn on your device

This option is available for devices running Android 4.0 and above. Learn how to check your Android version.

When you first turn on your Android device, you can enable TalkBack from the initial setup screen.

If possible, keep headphones handy so that you can plug them in when it's time to enter any passwords, such as your WiFi password. By default, key echo is only turned on if headphones are plugged into your device. You can change this setting later in your Android device settings.

- Devices running Android 4.1 and above: Press and hold two fingers on the setup screen. When your device recognizes this gesture, TalkBack is enabled and a tutorial begins.
- Devices running Android 4.0: Use your finger to draw a closed rectangle on the setup screen. When your device recognizes this gesture, you'll hear a beep.

Option 2: Turn on TalkBack later, after initial setup

The steps below require sighted assistance.

To turn on TalkBack, follow these steps:

1. Navigate to **Settings > Accessibility**.
2. Follow the steps for your version of Android. Learn how to check your Android version.
   - Android 4.1 and above: Select **TalkBack** and slide the TalkBack switch to the on position.
   - Android 4.0: Select **TalkBack** and slide the TalkBack switch to the on position. Next, go back to the previous screen and turn on **Explore by touch**.
   - Android 3.2 and earlier: Select the **Accessibility** checkbox, then select the **TalkBack** checkbox.
3. The confirmation screen displays a list of permissions that allow TalkBack to provide useful spoken feedback. To confirm that you allow these actions and to begin using TalkBack, touch **OK**.

Accessibility shortcut

You can turn on an accessibility shortcut that will let you turn on TalkBack at any time without using sight. To turn on and use this shortcut, follow these steps:

1. In Settings > Accessibility, select Accessibility shortcut.
2. Set the switch to the on position.
3. Now you can turn TalkBack on or off any time by following these steps:
    a. Press and hold the power button until you hear a sound or feel a vibration.
    b. Release the power button.
    c. Touch and hold two fingers until you hear audio confirmation (about 5 seconds).

Unlock your device

There are two ways to unlock your device once TalkBack is turned on:

- Two-finger swipe up from the bottom of the lock screen. If you've set a passcode for unlocking your device, you're taken to the pin entry screen for entering your passcode.
- Explore by touch to find the Unlock button at the bottom middle of the screen, then double-tap.

Explore by touch in TalkBack

Basic touch exploration

To explore by touch, slowly drag one finger around the screen. TalkBack announces the icons, buttons, and other items as you drag your finger over them. When the focus reaches an item you'd like to select, double-tap anywhere on the screen to select the focused item.

Linear navigation

To explore your screen one item at a time, swipe left or right to move through the items in sequence. After a 1-second delay, TalkBack provides a hint about available actions (starting in TalkBack 4.3.1). Learn more about TalkBack gestures.

Text editing

Type text with the virtual keyboard

When you enter a text editing field, a virtual keyboard appears on the bottom of the screen. You can explore this keyboard by touch just as you would other screens, but the activation works differently. (Note: If you've installed a keyboard other than the default Android keyboard, you might have a different experience.)

To type a letter:

1. Slide your finger over the keyboard until you hear the character you'd like to type.
2. Lift your finger to type the focused key.

Review text that you've typed

To review text in an input field character by character, press the volume keys.

- To move to the previous character, press volume up.
- To move to the next character, press volume down.

Beginning in TalkBack 4.3.1, you can hear phonetic descriptions of each letter on the keyboard or in your text input field (such as "S, sierra" or "F, foxtrot"). This option is currently only available for US English. Go to **Settings > Accessibility > TalkBack > Settings > Speech settings**, then turn on **Speak phonetic letters**.

Get to know your Home screen with TalkBack

Your Home screen is the screen that's displayed when you first turn on or unlock your device. You can get to the Home screen at any time by swiping up then left in an L-shaped gesture.

Here are some tips for navigating your Home screen with TalkBack:

- To move between items on the Home screen, swipe left or right. TalkBack announces where your focus is, then you can double-tap to select.
- If your device has more than one Home screen, you can move between Home screens with a two-finger swipe left or right. TalkBack announces what screen you're on, such as "Home screen 1 of 3."

The Home screen typically has the following elements:

- **Status bar:** Here you can find basic status information, such as notifications, the status of your battery, and connections to Wifi, Bluetooth, or your mobile network. Note that if your focus is on the status bar, you can't use the usual swipe gesture to move to the next item. To move focus out of the status bar, touch another part of the screen.
- **Search bar:** Some Android devices automatically include a search bar on the Home screen. Here you can search the web without needing to open a separate app. If your device doesn't include the search bar automatically, you can add it as a widget (refer to the Widgets section below).
- **Notifications:** The status bar at the top of the screen includes notifications. To open the notifications, two-finger swipe down from the top of the screen. To close the notification shade, use a two-finger swipe from left to right.
- **Apps:** Apps are small programs that perform specific tasks, such as check the weather, listen to music, send email, or read books. Apps are opened via icons on your screen. For example, the Gmail icon on your home screen opens the Gmail app. To discover what apps are on your Home screen, simply move your finger over the screen. To open an app once it has focus, double-tap the screen. To explore all apps on your device, locate the icon called "Apps" and double-tap. You're likely to have more than one screenful of apps, and you can move between screens with a two-finger left or right swipe. TalkBack will announce what page you're on, such as "Page 1 of 3." To add an app to your Home screen, touch the app once to give it focus, then double-tap and hold to place it on the Home screen.
- **Folders:** Folders are collections of apps. For example, a Google Play folder might hold a collection of Google Play apps, such as Play Music, Play Books, and Play Movies. Folder icons can appear on your Home screen just like app icons. You can open the folder, then explore the app icons inside the folder by moving your finger over the screen.
- **Widgets:** Your Home screen might also have widgets. Widgets are shortcuts to let you get information or perform tasks extra quickly. For example, the Calendar widget displays your calendar on your Home screen so that you can read your calendar events without any extra steps. To add a new widget, touch and hold two fingers on the Home screen. When you hear "Home screen one of one," you're on the screen where you can add widgets. Near the bottom of the screen, locate the "Widgets" button, then double-tap to select. Swipe right or left to move your focus through the widgets, then two finger swipe left to move to the next page. To add a widget, double-tap it while it has focus.

Answer and hang up calls with TalkBack

When you receive an incoming call, TalkBack automatically announces the caller, unless you've turned off this option in TalkBack settings. You can answer or reject the call as follows:

- To answer an incoming call, place your finger about three quarters of the way down the screen, then swipe right.
- To reject the call, swipe left instead of right.
- To reject the call and send a text message, swipe up.

To hang up, press the power button. Learn how to turn on the power button ends call setting.

Phone app on Nexus devices

Some of the information below might vary depending on your device and your Android version.

If you're using a Nexus device, here are the main elements of the Phone app:

- **Search for contacts and places:** This button is located on the top left corner of the screen just below the status bar. When you activate this button, a search field opens where you can search your contacts. If you have a network connection and if location services are turned on, you can also search for places near you. For example, search for a local restaurant to place an order or make a reservation.
- **Recent calls:** Below the search button, there's a short list of calls that you've recently dialed, received, or missed. Each entry in the log includes a button to call back that number. You can swipe right until you reach this button, or explore by touch to find it.
- **Navigation tabs:** Below the short list of recent calls, three tabs let you switch between different parts of the Phone app: Speed dial, Recents, and Contacts. Speed dial contains any contacts that you've marked as favorites and numbers that you frequently call. Recents contains a full list of recent calls. Contacts contains your contacts.
- **Dialpad:** The dialpad button is at the bottom right corner of the screen. Double-tap to select this button and open a standard phone dialpad.
- **In-call options:** While you're on a call, three checkboxes appear towards the top of the screen: Speaker phone, Mute, and Dialpad. You can activate these checkboxes during the call, as needed.

Learn more about how to make, receive, and block phone calls with your Nexus device.

Use TalkBack to browse the web with Chrome

Use TalkBack with Chrome

You can get spoken feedback using TalkBack in the Chrome browser. To get the most from this article, first finish the TalkBack tutorial.

Explore web pages with TalkBack navigation settings

To cycle through the TalkBack navigation settings:

1. Open a web page in Chrome.
2. Swipe up or down until you reach the setting that you'd like to use.
3. Swipe right to move forward or left to move back using the chosen setting.

You can also choose navigation settings from the TalkBack local context menu:

1. Open a web page in Chrome.
2. To open the menu, swipe up and then right in one smooth motion.
3. To explore the menu, drag your finger. The menu is a circle or a list, depending on your TalkBack settings.
4. Lift your finger to choose an item and close the menu.
5. Swipe right to move forward or left to move back.

The navigation settings include the following options for the Chrome browser:

- **Headings and landmarks.** Navigate by headings (level 1-6) and ARIA landmarks, such as "main" or "navigation."
- **Links.** Navigate by different kinds of links, such as visited, unvisited, or active. (Available starting in Chrome 50.)
- **Lists.** Explore items in list format. TalkBack tells you how many list items there are. (Available before Chrome 50.)
- **Controls.** Navigate by other elements, such as form fields, buttons, or menus.
- **Characters, words, or lines.** Explore one character, word, or line at a time.
- **Special content.** Explore content such as tables. (Available only in the local context menu.)
- **Default.** Explore every element on the page in order.

Explore web pages with a keyboard

If you use an external keyboard with your Android device, you can use TalkBack keyboard shortcuts to navigate web pages.

Separate tabs and apps on your Android phone or tablet

In the latest version of Chrome, tabs and apps are merged under a single button. On tablets, it's the Overview button. On smartphones, it's the Recent Apps button. For TalkBack to say how many browser tabs are open, you'll have to turn this function off.

1. Make sure TalkBack is turned on and your Chrome browser is open.
2. In the Chrome browser, go to the upper right corner of the screen.
3. Double-tap **More Options**.
4. Open **Settings**.
5. Open **Merge tabs and apps**.
6. Drag your finger until you hear the On switch. Double-tap to turn it off.
7. Double-tap **OK**.

Related articles

- Use tabs in Chrome for mobile.
- Learn more about how to use TalkBack with Chrome OS and your apps.
- Learn more about how to use the Chrome browser on your device without TalkBack.

Use global and local context menus

As you navigate using TalkBack, two context menus are available to help you find settings and controls. The global context menu contains commands that work anywhere, and the local context menu varies depending on the focused item.

Context menus can appear either as circles or as lists. You can set this preference in **TalkBack settings > Touch exploration settings > Show context menu as list**.

- When the menus are shaped like circles, you can drag your finger in a circle to hear the different options.
- When the menus are regular lists, drag your finger up and down the list to hear the different options.

Global context menu

To use the global context menu, follow these steps:

1. Swipe down then right. (You can choose a different gesture in TalkBack settings.)
2. Drag your finger over the menu to hear menu items.
3. When you hear the item that you'd like to select, release your finger.

The following options are available when you activate the global context menu:

- Quick navigation: Hear all of the items on the screen as you move your finger in a circle. This option isn't available if you're using the list version of the context menu instead of the circle version.
- Read from top: Hear a read-out of all items on the screen, starting from the top.
- Repeat last utterance: Hear a the last verbalization again.
- Spell last utterance: Hear a letter-by-letter spelling of TalkBack's last verbalization.
- Read from next item: Hear a read-out of all items on the screen, starting from the last focused item.
- Pause feedback: Selecting this option temporarily suspends TalkBack, including notifications and Explore by touch.
  - If you've set context menus to appear as circles in your TalkBack settings, this option is outside the circle menu on the top left corner of your screen.
  - Note: TalkBack resumes either when the screen turns on, when lock is shown, or from the notifications bar, depending on your "Resume from suspend" preference. You can change this preference in TalkBack settings.
- TalkBack settings: Selecting this option opens the TalkBack settings screen.
  - If you've set context menus to appear as circles in your TalkBack settings, this option is outside the circle menu on the top right corner of your screen.
- Text to speech settings: Select this option to change your text to speech settings.
  - If you've set context menus to appear as circles in your TalkBack settings, this option is outside the circle menu on the bottom right corner of your screen.
- Dim screen: Reduce the brightness of your screen.

Local context menu

The local context menu contains controls that relate to the focused item. The options available in the menu change depending on the item. If there are no relevant options, TalkBack announces "No menu items."

To use the local context menu, follow these steps:

1. Swipe up then right. (You can choose a different gesture in TalkBack settings.)
2. Drag your finger over the menu to hear menu items.
3. When you hear the item that you'd like to select, release your finger.

When you open the local context menu, the menu provides relevant navigation options, such as the following:

- Default
- Characters
- Words
- Paragraphs
- Pages
- Special content navigation
- Section navigation
- List navigation
- Control navigation
- Lines

When you activate the local context menu from screens other than your home screen, you might hear the following options:

- Cursor control menu: When you're editing text, this option opens a new local context menu with options such as Move cursor to beginning, Move cursor to end, Select all, and Start selection mode. If text is selected, options can include Cut, Copy, Paste, and End selection mode. To move the cursor while in an edit box, you can tap the volume keys.
- Links menu: When you navigate to text that contains links, you can open the local context menu, and select the "Links" sub menu to select one of the links included in the text.
- Label controls: This menu allows you to add, remove, and edit custom labels for unlabeled content. Sometimes applications are missing labels on images. You can use TalkBack to create your own labels for the images, to make it easier to identify them in the future. You can manage the custom labels from the Manage custom label setting in TalkBack settings.

TalkBack keyboard shortcuts

Set up your device

To use keyboard shortcuts with TalkBack, you need:

- An external keyboard with an Alt key. Learn how to connect to your keyboard.
- An Android device running Android 4.3 or later. Learn how to find your Android version.

After you connect your keyboard to your Android device, choose a keymap:

1. Open your Android device settings.
2. Go to **Accessibility > TalkBack > Settings > Manage keyboard shortcuts**.
3. Under Keymap, select **Choose a keymap**.
4. Choose a keymap:
   - **Classic keymap**: This option includes basic shortcuts and lets you customize your shortcuts.
   - **Default keymap**: This option has more shortcuts, including shortcuts for navigating web pages in Chrome. With this option, it currently isn't possible to customize shortcuts.

Use keyboard shortcuts

Classic keymap (basic shortcuts)

Navigation

- Move to next item: Alt + Shift + Right arrow
- Move to previous item: Alt + Shift + Left arrow
- Move to first item: Alt + Shift + Up arrow
- Move to last item: Alt + Shift + Down arrow
- Click focused element: Alt + Shift + Enter

Global actions

- Back: Alt + Shift + Backspace
- Home: Alt + Shift + h
- Recent apps/Overview: Alt + Shift + r
- Notifications: Alt + Shift + n
- Search the screen: Alt + Shift + / (forward slash)
- Next navigation setting: Alt + Shift + Equals (=)
- Previous navigation setting: Alt + Shift + Minus (-)
- Open global context menu: Alt + Shift + g
- Open local context menu: Alt + Shift + L
- Stop TalkBack speech: Control
- Pause or resume TalkBack: Alt + Shift + z

You can keep the default shortcuts listed above, or you can change them in **Settings > Accessibility > TalkBack > Settings > Manage keyboard shortcuts**. Learn more about TalkBack settings.

Global actions

- Back: Alt + Control + Backspace
- Home: Alt + Control + h
- Recent apps/Overview: Alt + Control + r
- Notifications: Alt + Control + n
- Search the screen: Alt + Control + / (forward slash)
- Open global context menu: Alt + Space
- Open local context menu: Alt + Shift + Space
- Pause or resume TalkBack: Alt + Control + z

Text navigation

- Move to next word: Alt + Shift + Control + Right arrow
- Move to previous word: Alt + Shift + Control + Left arrow
- Move to next character: Alt + Shift+ Right arrow
- Move to previous character: Alt + Shift+ Left arrow

Chrome web page navigation

Use these shortcuts to move to the next or previous element on a web page.

- Button
  - Next: Alt + b
  - Previous: Alt + Shift + b
- Control
  - Next: Alt + c
  - Previous: Alt + Shift + c
- ARIA landmark
  - Next: Alt + d
  - Previous: Alt + Shift + d
- Editable field
  - Next: Alt + e
  - Previous: Alt + Shift + e
- Focusable item
  - Next: Alt + f
  - Previous: Alt + Shift + f
- Graphic:
  - Next: Alt + g
  - Previous: Alt + Shift + g
- Heading
  - Next: Alt + h
  - Previous: Alt + Shift + h
- Heading level 1, 2, 3, 4, 5 or 6
  - Next: Alt + [1-6]
  - Previous: Alt + Shift + [1-6]

- List
  - Next: Alt + o
  - Previous: Alt + Shift + o
- List item
  - Next: Alt + i
  - Previous: Alt + Shift + i
- Link
  - Next: Alt + L
  - Previous: Alt + Shift + L
- Table
  - Next: Alt + t
  - Previous: Alt + Shift + t
- Checkbox
  - Next: Alt + x
  - Previous: Alt + Shift + x
- Combo box
  - Next: Alt + z
  - Previous: Alt + Shift + z

Learn about all TalkBack settings

To review or change TalkBack settings, navigate to **Settings > Accessibility > TalkBack > Settings**.

TalkBack has four settings categories:

- Speech: These settings control spoken feedback.
- Other feedback: These settings control vibration and non-verbal sounds.
- Touch exploration: These settings control touch exploration and gestures.
- Miscellaneous: These settings include keyboard shortcuts, suspend and resume, and more.

Note: Settings vary by device and TalkBack version. To find your TalkBack version, navigate to **Settings > Apps > TalkBack**. The version number (such as "version 4.4.1") is listed at the top of the screen.

Speech settings

Setting	Description	Options
Speech volume	Set the TalkBack speech volume to be the same or less than the media volume. Media volume is the volume of other sound on your device.	Match media volume; 75% of media volume; 50% of media volume; 25% of media volume
Use pitch changes	Change the voice pitch for keyboard feedback. When you check this option, spoken keyboard feedback is set to a lower-pitched voice.	On; Off
Keyboard echo	Hear typed keys.	Always speak typed keys; Only for on-screen keyboard; Never speak typed keys
Speak when screen is off	By default, no speech occurs when the screen is off. When checked, notifications are spoken when the screen is off.	On; Off
Use proximity sensor	Some Android models have proximity sensors. If present, use this setting to temporarily silence TalkBack. Phones: Wave your finger on the proximity sensor to silence TalkBack. Tablets: Touch any application on the display screen. Touch the screen again to restart TalkBack.	Proximity sensor silences speech; Proximity sensor does not control speech
Shake to start continuous reading	Shaking the device enables continuous reading.	Disabled; Very light; Light; Medium; Hard; Very hard
Speak caller ID	Some Android devices have this option. Hear your caller's identity spoken before you answer.	On; Off
Speak phonetic letters	Hear phonetic letters (such as "F, foxtrot" or "S, sierra") when you long-press on the keyboard or move the accessibility focus by a character in a text input field. This option is currently only available for US English. (TalkBack 4.3.1 and later.)	On; Off
Speak usage hints	Hear usage hints when you navigate among screen elements, after a brief delay. (TalkBack 4.3.1 and later.)	On; Off

Other feedback settings

Setting	Description	Options
Vibration feedback	Get vibration feedback for your actions, such as when you select an object or navigate on your device.	On; Off
Sound feedback	Get sound feedback in addition to verbalizations as you navigate.	On; Off
Focus speech audio	Make other audio volume decrease when TalkBack is speaking.	On; Off
Sound volume	Available when Sound feedback is enabled. Controls the sound volume of speech and other sounds created by TalkBack relative to the system's volume.	Match media volume; 75% of media volume; 50% of media volume; 25% of media volume

Touch exploration settings

Setting	Description	Options
Explore by touch	Touch the screen to hear what's under your finger. This setting is enabled by default. If disabled, your device doesn't respond to shortcut gestures or speak items when you touch the screen. Learn more about touch exploration.	On; Off
Automatically scroll lists	When checked, lists scroll by themselves during linear navigation (swiping to move between objects).	On; Off
Single-tap selection (Experimental)	Touch currently focused item only once to select, instead of double-tapping.	On; Off
Show context menu as list	Select this setting to show the global and local context menus as lists instead of circles. Learn more about the global and local context menus.	On; Off
Launch "Explore by touch" tutorial	Review a tutorial on touch exploration.	Touch to launch tutorial
Manage gestures	Select this setting to change the meaning of TalkBack gestures.	Learn more about TalkBack gestures.
Manage custom labels	Use this setting to manage any custom labels that you've created with the local context menu.	Learn more in Global and local context menus.
Export custom labels	If you've added custom labels, select this option to export them and share with other people. (TalkBack 4.4 and later.)	Learn more in Global and local context menus.

Miscellaneous settings

Setting	Description	Options
Manage keyboard shortcuts	Change TalkBack keyboard shortcuts settings. (TalkBack 4.2 and later.)	Learn more about TalkBack keyboard shortcuts.
TalkBack suspend and resume shortcut	When this setting is on, you can long press the volume up and down keys to suspend or resume TalkBack. (TalkBack 4.2 and later.)	On; Off
Dim screen when TalkBack is enabled	If enabled, the screen brightness is reduced to almost zero when TalkBack is on. For the first three minutes, you can disable screen dimming by pressing the volume up and down buttons three times quickly. During these first three minutes, instructions to disable screen dimming appear on the screen. (TalkBack 4.2 and later.)	On; Off
Dim screen shortcut	Press both volume keys three times quickly to enable or disable screen dimming. (TalkBack 4.4 and later.)	On; Off
Resume from suspend	Choose how TalkBack should resume after you've suspended it.	When screen turns on; When lock screen is shown; From notification only
Developer settings > Log output level	App developers can use this setting to specify which types of events to log.	None; Assert; Error; Warn; Info; Debug; Verbose
Developer settings > Display speech output	When enabled, spoken results are shown on-screen.	On; Off

Disable TalkBack

To turn off TalkBack, follow these steps:

1. Navigate to **Settings > Accessibility > TalkBack**.
2. Slide the TalkBack switch to the off position.
3. In the Stop Talkback dialog, select **OK**.

Welcome to the Android Accessibility Help Center

+ Get started

+ TalkBack screen reader for Android

- **Braille support for Android with BrailleBack**

  Install and enable BrailleBack

  Navigate using BrailleBack

  Input text with BrailleBack

  Search with BrailleBack

  Change BrailleBack settings

+ Control Android by voice with Voice Access

+ Switch access for Android

+ More Android accessibility features

+ Support and updates

Install and enable BrailleBack

With BrailleBack, you can connect a refreshable braille display to your Android device via Bluetooth. BrailleBack works with the TalkBack screen reader service to provide a combined speech and braille experience.

As you use BrailleBack, screen content appears on your braille display, and you can navigate and interact with your device using the keys on the display. You can also input text using the braille keyboard.

BrailleBack is an open-source application developed by the Eyes-Free Project.

Step 1: Make sure your braille device is supported

The current version of BrailleBack supports the following devices:

- APH Refreshabraille
- Baum VarioConnect
- Esys EuroBraille
- Freedom Scientific Focus Blue (14 and 40 cell models)
- HandyTech (Basic Braille, Active Braille, Braille Star, Braille Wave, Braillino, Easy Braille)
- Harpo Braillepen 12
- HIMS (BrailleSense, Braille EDGE, Smart Beetle)
- Humanware Brailliant (1st generation and BI models)
- Optelec Alva (BC640, BC680)
- Optelec EasyLink 12 Touch
- Papenmeier Braillex Trio
- Seika (notetaker and 40 cell display)

Step 2: Install BrailleBack on your Android device

You can get BrailleBack from Google Play using one of the following options:

- Option 1: Use this direct link to BrailleBack on Google Play, then select **Install**. Choose a device where you'd like to install the app, then select **Install**.
- Option 2: Open the Play Store app on your Android device, then search for "BrailleBack." Select BrailleBack from the search results, then select **Install**.

Step 3: Enable BrailleBack and pair your braille display

Before you enable Brailleback, make sure that TalkBack is also enabled. Learn how to enable TalkBack.

To enable BrailleBack on your Android device, follow these steps:

1. Go to **Settings > Accessibility > BrailleBack**.
2. Slide the BrailleBack switch to the on position.
3. Go back to **Settings**. Under Wireless & networks, select **Bluetooth**.
4. Slide the Bluetooth switch to the on position, if it's not there already.
5. Select the name of your braille display.
   - If your braille display isn't listed, make sure the display is in pairing mode, then select **Search for devices** on your Android device.
   - For pairing instructions, refer to your braille device's documentation.

Navigate using BrailleBack

The table below lists keystrokes for devices with braille input keys.

With BrailleBack, you can find keyboard help any time in one of the following ways:

- Enter **Space + dots 1 2 3**.
- Go to **Settings > Accessibility > BrailleBack > Settings > Keyboard help**.

Keystrokes might vary by device.

Action	Keystroke
Help	Space + dots 1 2 3
Back button	Space + dots 1 2
Home button	Space + dots 1 2 5
Notifications	Space + dots 1 3 4 5
Recent apps	Space + dots 1 2 3 5
Search the screen for text	Space + dots 3 4
Enter key (when editing text)	Space + dot 8
Backspace (when editing text)	Space + dot 7
Navigate to the right or left	Right or left pan key

Tip: For devices with routing keys: routing keys are used to tap on the items under the finger or move the caret when editing text. On some devices, long pressing a routing key has the same effect as long pressing the item on the screen.

Input text with BrailleBack

To input text with your braille keyboard, first enable the keyboard in your Android settings, under **Language & input**. If you try to use the keyboard before completing this step, you'll receive a prompt to change your settings.

To edit a text field:

- If your device has routing keys, tap one of the routing keys on top of the field when it's visible on the braille display.
- If your device doesn't have routing keys, focus and activate the text field.

You can then use routing or arrow keys to move in the text field.

When editing text, Brailleback switches to 8 dot braille.

Search with BrailleBack

If you have a braille display with braille input keys, you can use on-screen search to jump quickly to an item on your screen.

1. To start an on-screen search, press Space plus dots 3 and 4. You're now in search mode.
   - In search mode, the beginning of the display has a letter “S” followed by a colon.
   - The first time you start an on-screen search, a tutorial opens to tell you what keys you can use to navigate.
2. To perform your search, start typing some text. As you type, items that match your search appear on the display.
3. To jump to the previous and next search result, use your display's navigation keys.
4. To select a search result and leave search mode, press Space plus dot 8.
5. To exit search mode without selecting a search result, press Space plus dots 3 and 4. With this command, you return to where you were before you started the search.

Change BrailleBack settings

To review or change BrailleBack settings, navigate to **Settings > Accessibility > BrailleBack > Settings**.

BrailleBack has three categories of settings: Device, Braille, and Miscellaneous.

Device settings

Setting	Description
Status	Displays the paired device status. Tap this option to connect to an already paired device with a display. If the connection is successful, your device will be ready for use. Note: Pairing is a one-time action, while connecting happens each time the Android device is turned on or when the screen is turned on.

Braille settings

Setting	Description
Braille type	Choose Literary braille or Computer braille.
Literary braille table	Set the correct language and the contracted (grade 2) or uncontracted (grade 1) braille grade.
Computer braille table	Set the language for 8 dot computer braille and text input.

Miscellaneous settings

Select **Developer options** to set preferences for app developer testing.

Setting	Description
Log output level	Sets the amount of output that BrailleBack generates in the Android debug log.
Show braille output on screen	Displays the braille display content in a small window on top of other windows on the screen. You can use this feature to test braille support even without a hardware braille display.
Launch tutorial	This option is displayed if the braille output is shown on screen.

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Get started with Voice Access

Voice Access is an accessibility service that lets you control your Android device with your voice.

Using spoken commands, you can activate on-screen controls, launch apps, navigate your device, and edit text. Voice Access can be helpful for users for whom using a touch screen is difficult.

Get Voice Access

Voice Access is currently in a limited beta release in English only. To opt in, follow the instructions at g.co/voiceaccess.

Minimum requirements

Before you install Voice Access, make sure that your device meets the following minimum requirements:

- Android version: Lollipop (5.0) or later. You can find your Android version by navigating to **Settings > About phone** or **About tablet**.
- Google app: Your device must have the Google app installed. If you don't see "Google" in your list of apps, you can download the Google app from Google Play.

Recommended configuration

In addition to the minimum requirements above, Voice Access works best with the following configuration:

- Google app version: Update your Google app to the latest version. Check Google Play to see if updates are available for the Google app.
- "Ok Google" detection: Turn on "Ok Google" detection and enable it from any screen. Learn how to set up "Ok Google."
- Google Now Launcher: Install the Google Now Launcher from Google Play. Learn more about how to install and use the Google Now Launcher.
- Device: Voice Access works best with Nexus devices. However, if you don't have a Nexus device, Voice Access also works on most other Android mobile devices.

Turn on Voice Access

To turn on Voice Access on your Android device, follow these steps:

1. Go to **Settings > Accessibility** and find Voice Access. The location of Voice Access within Accessibility settings can vary.
2. Tap the Voice Access switch to move it to the on position.

The first time you turn on Voice Access, two extra steps help you get started:

- A guided setup for your "Ok Google" settings helps to ensure you'll have the best possible hands-free experience.
- An interactive tutorial teaches you how Voice Access works.

After you turn on Voice Access, it stays on even if you reboot your device.

You can turn off Voice Access in **Settings > Accessibility > Voice Access**.

Use Voice Access commands

Start Voice Access

After you turn on Voice Access in Settings, you can start using Voice Access at any time with any of the options below.

- **"Ok Google":** Say "Ok Google" to bring up the Google app prompt. After you hear the beep, say "Start Voice Access" to start Voice Access. (Note: This option requires certain Google Now and device settings. See "Recommended configuration" for more details.)
- **Voice Access button:** To show a Voice Access button on your screen all the time, go to Voice Access settings and turn on **Activation button**. You can then tap the button at any time to start a Voice Access session. To move the button on your screen, touch and hold, then drag it to the new position.
- **Voice Access notification:** Open your notification shade, and tap the Voice Access icon labeled "Touch to start."
- **Bluetooth switch:** You can use an external bluetooth switch or keyboard to start Voice Access. To set up switch access, follow steps 1 and 2 of switch access setup.
- **Phone calls:** Voice Access automatically starts when your phone rings, letting you use your voice to decline or answer the call. You can also set up Voice Access so that it stays on during phone calls. To turn on this setting, go to Voice Access settings and turn on **Active during calls**.
- **Activate on lock screen:** If you've set a screen lock on your Android device, you can set up Voice Access to turn on automatically when you turn on your screen. (You always need to turn on your screen manually, since Voice Access can't turn on your screen.) To use this option, be sure to use the PIN screen lock .

Say a command

After you start Voice Access, your device beeps to let you know it's ready to listen. You can then start using voice commands to control your device.

Voice Access has three kinds of commands:

- **Basics and navigation:** Use these commands on any screen (such as "Go back" or "Go Home").
- **Gestures:** These commands let you tap, scroll, and make other gestures with your voice (such as "Click OK" or "Scroll down").
- **Text editing:** Type, edit, and format text with your voice (such as "Type hello" or "Replace 'coffee' with 'tea'").

For a complete list of voice commands, see the Voice Access commands below, or say "Show all commands" while using Voice Access.

Voice Access commands

Basics & navigation

Voice Access

Action	Command
See commands for the current screen	"What can I say?"
Show all voice commands	"Show all commands"
Start Voice Access tutorial	"Open tutorial"
Hide number labels	"Hide numbers"
Show number labels	"Show numbers"
Stop Voice Access	"Stop Voice Access" "Cancel Voice Access"

General

Action	Command
Open any app, such as "Open Gmail"	"Open [app]"
Go to the previous screen	"Back" "Go back"
Go to your Home screen	"Home" "Go home"
Open notifications shade	"Notifications" "Show notifications"
Open Quick Settings panel	"Quick Settings" "Show Quick Settings"
Open recent apps	"Recents" "Show recent apps" "Overview"

Settings

Action	Command
Turn Wi-Fi on or off	"Turn on Wi-Fi" "Wi-Fi on" "Turn off Wi-Fi" "Wi-Fi off"
Turn Bluetooth on or off	"Turn on Bluetooth" "Bluetooth on" "Turn off Bluetooth" "Bluetooth off"
Change volume	"Turn up volume" "Turn down volume" "Turn [media/alarm/phone] volume up" "Turn [media/alarm/phone] volume down"
Mute or unmute	"Mute" "Silence" "Unmute" "Mute [media/alarm/phone] volume" "Unmute [media/alarm/phone] volume"

Gestures

Touch gestures

Action	Command
Press any labeled control, such as Send, OK, or Save	"[Send]" "Tap [Send]"
Touch and hold	"Long-press [Hangouts]"
Turn on an on/off switch	"Switch on [airplane mode]"
Turn off an on/off switch	"Switch off [airplane mode]"

Swipe gestures

Action	Command
Scroll	"Scroll left" "Scroll right" "Scroll up" "Scroll down" "Scroll to top" "Scroll to bottom"
Swipe	"Swipe forwards" "Swipe backwards"

Type text

Action	Command
Speak to type at the cursor	"[running 5 minutes late]" "Type [running 5 minutes late]"
Undo the last spoken text edit	"Undo"
Redo the last spoken text edit	"Redo"
Insert text before or after another word or phrase	"Insert [big] before [small]" "Insert [small] after [big]"
Insert text between two words or phrases	"Insert [medium] between [big] and [small]"

Replace text

Action	Command
Replace a word or phrase	"Replace [cat] with [dog]"
Replace everything between two words or phrases	"Replace everything between [first] and [last] with [middle]"
Capitalize the first letter in a word or phrase	"Capitalize [john]"
Capitalize all letters in a word or phrase	"Uppercase [urgent]"
Lowercase the first letter of a word or phrase	"Lowercase [chocolate]"

Delete text

Action	Command
Delete everything in the text box	"Delete all" "delete everything"
Delete a specific word or phrase	"Delete [chocolate]"
Delete the letter before the cursor	"Delete"
Delete to the start or end of the text box	"Delete to the beginning", "Delete to the end"
Delete selected text	"Delete selected text"
Delete everything between two words or phrases, inclusive	"Delete from [chocolate] to [coffee]"
Delete any number of characters, words, sentences, lines, paragraphs, or pages before the cursor	"Delete [3] words"
Delete any number of characters, words, sentences, lines, paragraphs, or pages after the cursor	"Delete the next [3] words"

Move the cursor

Action	Command
Place cursor at the start of the text	"Go to the beginning"
Place cursor at the end of the text	"Go to the end"
Place cursor before or after a word or phrase	"Move after [chocolate]" "Move before [coffee]"
Place cursor between two words or phrases	"Move between [Dear] and [John]"
Move cursor any number of characters, words, sentences, lines, paragraphs, or pages to the right	"Right [4] words"
Move cursor any number of characters, words, sentences, lines, paragraphs, or pages to the left	"Left [6] words"

Select text

Action	Command
Select everything in the text box	"Select all text"
Unselect any selected text	"Unselect all text"
Select everything from the cursor to the start of the text box	"Select to the beginning"
Select everything from the cursor to the end of the text box	"Select to the end"
Select a specific word or phrase	"Select [chocolate]"
Select everything between two words or phrases, inclusive	"Select from [chocolate] to [coffee]"
Select any number of characters, words, sentences, lines, paragraphs, or pages before the cursor	"Select [5] words"
Select any number of characters, words, sentences, lines, paragraphs, or pages after the cursor	"Select the next [4] words"

Number labels

After you start Voice Access, small numbers appear next to everything on your screen that you can interact with. For example, you might see the number 7 next to a button labeled "Save," like this: 

To select "Save" in this case, you could say any of the following commands:

- "7"
- "Save"
- "Click 7"
- "Click Save"

Voice Access numbers are helpful in several cases:

- You can interact with something that doesn't have a label (such as an image or a switch).
- If two things on your screen have the same text label (such as two "Options" menus), you can say the number instead of the word.
- If a text label is long or difficult to pronounce, saying the number might be easier.

Text editing

You can use Voice Access commands to edit and format text. Voice Access shows a blue border around editable text fields to show that you can start typing and editing. If the blue border doesn't appear around a text field, say the number next to the text field.

Feedback

When you say a command, Voice Access displays your words in a feedback bar at the top of the screen. You can watch the feedback bar to see if Voice Access understood you correctly.

When you stop speaking, Voice Access stops listening and attempts to follow your command. The feedback bar shows you whether Voice Access succeeded or failed. After completing one command, Voice Access automatically begins listening again for your next command.

To adjust the kind of feedback you see, change your Voice Access settings.

Ambiguous commands

Sometimes Voice Access detects multiple matches for your voice command. For example, you might say "menu" when there are two buttons labeled "Menu." When this happens, Voice Access shows numbers for each option (such as "1" and "2") and asks you to choose one of the numbers.

Get help using Voice Access

As you use Voice Access, you can get help any time:

- To see a list of commands that relate to your current screen, say "What can I say"
- To see a list of all commands, say "Show all commands"
- To open the Voice Access tutorial, say "Open tutorial"

The tutorial and the list of commands are also available through Voice Access settings.

Stop Voice Access

To stop Voice Access:

- Touch anywhere on the screen.
- Say "Stop Voice Access."
- Wait thirty seconds. (Note: This option only works if you've turned on "Timeout after no speech" in Voice Access settings.)
- Turn the screen off. To save battery, Voice Access automatically stops when the screen is off.
- Open your notification shade, and tap the Voice Access icon labeled "Touch to pause."
- If you configured a Bluetooth switch, you can press the switch to stop Voice Access.

Change Voice Access settings

To view or change your Voice Access settings, go to **Settings > Accessibility > Voice Access > Settings**. Details about each setting are below.

Help

Show all commands

See a list of all Voice Access commands. You can also open this list with the voice command "show all commands".

Help & feedback

Read help articles, and send feedback, errors, or bug reports to Google.

Open tutorial

Open the Voice Access tutorial. You can also open the tutorial with the voice command "open tutorial."

General

Activation button

Start Voice Access from any screen with a Voice Access button.

Activation key

Assign a custom keyboard key or Bluetooth switch to start and stop Voice Access.

Timeout after no speech

Stop Voice Access after 30 seconds of no speech.

Activate on lock screen

Automatically start Voice Access when the screen turns on, if the lock screen is showing.

Active during calls

Keep Voice Access on during phone calls. You might turn on this setting if you want to use Voice Access during a phone call.

Note: Voice Access automatically starts when a call comes in, regardless of this setting. If you turn off the "Active during calls" setting, Voice Access stops after you answer or decline the call (or if you turn off Voice Access).

Show borders

Show borders around anything on the screen that you can interact with.

Feedback

Spoken feedback

Hear a spoken repetition of your voice commands, and hear errors spoken aloud. For example, if you say "Go Home," Voice Access repeats "Go Home."

Text feedback

See a text version of your voice commands in the feedback bar, and see any errors as text.

Verbosity

Choose how much feedback Voice Access provides (all feedback, only on errors, or no feedback).

More options

Open setup wizard

Open a setup wizard to change your "Ok Google" settings for the best possible hands-free experience.

Number labeling

Choose which on-screen controls have number labels (everything, or only controls without text labels).

Troubleshoot Voice Access

Before you begin troubleshooting, try the following steps to resolve your issue:

1. **Install the latest version of Voice Access.** Though Voice Access should automatically update based on your Android Play Store settings, you can always manually check for updates on Google Play.
2. **Use the recommended configuration.** Refer to the recommended configuration in Get started with Voice Access.

If Voice Access still isn't working, try the steps below.

Voice Access doesn't recognize voice commands

If Voice Access doesn't recognize your voice commands, try the following:

- Ensure your device is connected to the Internet over cellular data or Wi-Fi.
- Move to a quiet place.
- Speak more slowly and clearly.
- Try using a headset with a microphone.
- Repeat your command.

Voice Access freezes or cuts off words in the middle of a command

If Voice Access appears to freeze, wait a few seconds. You might need to do this if you issue a long command or if another app tries to listen to you at the same time.

You're having trouble unlocking your device with Voice Access

The only lock screen currently supported by Voice Access is the PIN unlock. To protect your security when you enter your PIN, Voice Access shows random words on the screen (such as "red" or "blue") instead of Voice Access number labels. This way you can say the words instead of your PIN numbers. You can change your lock screen in **Settings > Security** under **Device security**.

If you have trouble starting Voice Access on the lock screen, try the following steps:

- In the Google app, turn on **Trusted voice** (Google app > Settings > Voice). This setting lets you use "Ok Google" to turn on Voice Access from the lock screen. Learn more about "Ok Google". (Note: The availability of this setting varies by device.)
- In Voice Access settings, turn on "Activate on lock screen." This setting automatically starts Voice Access when the screen turns on, if the lock screen is showing. Learn how to change your Voice Access settings.
- Connect your device to a Bluetooth switch or keyboard, then use the switch or keyboard to start Voice Access on the lock screen. For more information about setting up a Bluetooth switch, see instructions to start Voice Access.
- Set up your device for automatic unlock. You can pair a trusted Bluetooth device or NFC tag to your device to unlock it automatically for you. Learn more about Smart Lock.

You can't turn on your screen with Voice Access

To turn on the screen by voice, update your "Ok Google" settings to turn on **Trusted voice** with **Always-on** (Google app > Settings > Voice). With these settings, you can say "Ok Google" when the screen is off.

Learn more about "Ok Google". (Note: The availability of this setting varies by device.)

Your battery drains faster than normal when Voice Access is on

Though Voice Access uses almost no battery when it's inactive, it uses a higher amount of battery when listening for your commands. Consider using Voice Access while your device is connected to a power supply if you find that your battery is draining faster than normal.

Voice Access did something else unexpected

If Voice Access did something you didn't expect, or if you have suggestions for how we can improve Voice Access, we'd love your feedback. You can send a report from **Help & feedback** in **Settings > Accessibility > Voice Access > Settings**, or by submitting feedback online.

Welcome to the Android Accessibility Help Center

About switch access for Android

This information applies only to devices running Android 5.0 and higher.

Switch access lets you interact with your Android device using one or more switches. Switch access can be helpful for users with mobility limitations that prevent them from interacting directly with the Android device.

With switch access, you can scan to the item on the screen that you want to click. The Android device scans all the clickable items on the screen, highlighting each item in turn, until you select the desired item. You can also customize switch access by assigning each switch to a particular function. For example, a switch can be assigned to activate the "Home" button.

To use switch access, you'll first need one or more switches. There are several options:

- **Use an external switch:** A switch is a device that sends a keystroke signal to your Android device. Several companies sell these devices, such as Ablenet, Enabling Devices, RJ Cooper, and Tecla. These devices connect to your Android device via USB or Bluetooth. (Google does not endorse these companies or their products.)
- **Use an external keyboard:** You can configure a standard USB or Bluetooth keyboard to work as a switch device by assigning one or more of its keys to actions.
- **Use buttons on your Android device:** Built-in buttons on your Android device, such as the volume up and volume down buttons, can also be assigned to actions. This option is intended for developers. If you're using this option, you can skip the first two setup steps in the next article.

Next, learn how to set up switch access on your Android device.

Set up switch access for Android

This information applies only to devices running Android 5.0 and higher.

Step 1: Connect switches to your Android device

If you're using an external switch device or keyboard, the first step is to connect it to your Android device.

- USB: Connect the switch or keyboard to your Android device with a compatible USB cable.
- Bluetooth: On your Android device, navigate to **Settings > Bluetooth**. For more instructions, check the documentation for your switch or keyboard, or learn more about connecting to Bluetooth devices.

Step 2: Enable the on-screen keyboard

After you've connected an external switch device or keyboard, Android automatically hides the on-screen keyboard. However, you'll need to see the keyboard in order to enter text with switch access.

To re-enable the on-screen keyboard:

1. Navigate to **Settings > Language & input > Current Keyboard**.
2. Turn on the Hardware (Show input method) setting.

Step 3: Choose scanning settings

Your scanning settings depend on your personal preferences and how many switches you have.

The sections below describe these three options in detail:

- **Auto-scanning (1 switch)**: You press your switch to start scanning, then press the switch again to select the highlighted item.
- **Step scanning (2 or more switches)**: You press one switch to move the highlighting on your screen, then press another switch to select the highlighted item.
- **Option scanning (2 or more switches)**: Groups of items are highlighted in colors that correspond to your switches. Press the switch for the group containing the item you want to select, then repeat until you select the item. Option scanning is usually faster than step scanning.

Auto-scanning (1 switch)

If you use a single switch, you'll need to turn on auto-scanning. Auto-scanning automatically moves the highlight through the items on the screen at a speed that you choose.

To set up single-switch auto scanning:

1. Navigate to **Settings > Accessibility > Switch Access > Settings**.
2. Touch **Auto-scan**.
   - If Auto-scan doesn't appear in the list of settings, touch **Scanning method** and select either **Row-column (keyboard only)** or **Row-column**.
3. Touch **Assign Keys for Scanning > Auto-scan**.
4. When the dialog opens, press your switch. The dialog shows the key corresponding to the switch you pressed.
5. Touch **OK** to exit the dialog.

Optional steps:

- To customize the time spent on each item, touch **Time Delay** and enter a number of seconds.
- To add a second switch to change the direction of scanning, touch **Assign Keys for Scanning > Reverse Auto Scan**.
- To change the scanning method, touch **Scanning method** and select **Row-column (keyboard only)** or **Row-column**. Learn more about the scanning methods.

Step scanning (2 or more switches)

If you have two or more switches, you can use two-switch step scanning. One switch moves the highlight to the next item (the "Next" switch), and the other switch selects the currently highlighted item (the "Select" switch).

To set up two-switch step scanning:

1. Navigate to **Settings > Accessibility > Switch Access > Settings**.
   - Make sure that **Auto-scan** is not turned on.
2. Touch **Assign Keys for Scanning > Next**.
3. When the dialog opens, press the switch you'll use to move focus to the next object on the screen (your "Next" switch). The dialog shows the key corresponding to the switch you pressed.
4. Touch **OK** to exit the dialog.
5. Touch **Select**.
6. When the dialog opens, press the switch you'll use to click (your "Select" switch). The dialog shows the key corresponding to the switch you pressed.

Optional steps:

- To change the scanning method, touch **Scanning method** and select **Row-column (keyboard only)** or **Row-column**. Learn more about the scanning methods.
- To assign other switches (if you have more than two switches), touch **Assign Keys for Scanning** or **Assign Keys to Actions**. Touch an action, then press the switch you want to use.

Option scanning (2 or more switches)

If you have two or more switches, you can use option scanning. Rather than presenting each option on your screen as a "yes or no" selection, option scanning highlights groups of items. You can then narrow down the size of the group until you reach your choice. Option scanning often reduces the average number of switch presses needed to perform actions.

To set up option scanning:

1. Navigate to **Settings > Accessibility > Switch Access > Settings**.
   - Make sure **Auto-scan** is not turned on.
2. Touch **Scanning Method > Option scanning**.
3. Touch **Assign Keys for Scanning**.
   - Note: If you previously assigned switches to "Select" and "Next," you'll see the switches are now assigned to "Option Scan Switch 1" and "Option Scan Switch 2." If you're satisfied with this assignment, you can skip the remaining steps.
4. To assign your first option scanning switch, touch **Option Scan Switch 1**.
5. When the dialog opens, press the switch you'll use to select the first option. The dialog shows the key corresponding to the switch you pressed.
6. Repeat steps 4 and 5 for **Option Scan Switch 2**.

Optional step:

- To assign additional switches, repeat steps 4 and 5 for each switch, up to a total of five switches. If you assign more than two switches, items on the screen are divided into more groups. As a result, each group is smaller, and you'll need fewer switch presses to reach the item that you want to select.

Step 4: Turn on switch access

To turn on switch access after choosing your scanning settings as described above:

1. From the Switch Access Preferences screen, touch the back button to return to the Switch Access screen.
2. Turn on the Switch Access setting.
3. In the confirmation dialog, select **OK** to confirm permissions and turn on switch access.

Next, learn tips for using switch access.

Tips for using switch access

This information applies only to devices running Android 5.0 and higher.

After you set up switch access for your device, use the tips below to get started.

Basic navigation

If you're using auto-scanning

1. To start scanning, press your switch.
2. When the item that you want to select is highlighted, press the switch to select it.

If you're using step scanning

1. To start scanning, press your "Next" switch.
2. Continue pressing "Next" until you reach the item you want to select.
3. To select the highlighted item, press your "Select" switch.

If you're using option scanning

1. To start scanning, press your switch.
2. Look at the item you want to select. Identify what color highlighting is used for the group containing your item.
3. Press the switch that corresponds to the group's color.
4. Repeat steps 2 and 3 until you select the item. The highlighting colors change each time you press a switch.

To clear the highlighting and reset scanning, choose one of these options:

- Navigate to the Menu button and select **Cancel**.
- If you have a switch with no corresponding highlighted items, press that switch.

More tips

Scroll: When you click an item that can scroll, a menu appears with options to scroll forward or backward.

Global menu: If you scan through all of the items on the screen without making a selection, a menu appears with actions such as Home, Back, Notifications, and Quick Settings. If you're using option scanning, you can press the Menu button.

Auto-Select: You can turn Auto-Select on or off in the Global menu.

- When Auto-Select is off, selecting an item on the screen opens an Actions menu with all actions that you can take on the item. Actions include Select, Long-press, and Move. On a text field, actions include Previous character, Next character, Previous word, and Next word.
- When Auto-Select is on, selecting an item on the screen automatically selects that item.

Automatically start scanning: To start scanning automatically, without pressing a switch, turn on "Automatically start scanning" in your switch access settings.

Next, learn how to customize switch access settings.

Customize switch access settings

This information applies only to devices running Android 5.0 and higher.

The following settings are available in **Settings > Accessibility > Switch access > Settings**.

Scanning method

The scanning methods below adjust how switch access scans your screen:

- **Row-column (keyboard only).** This is the default scanning method. Everywhere except keyboards, press the "Next" switch to move the highlight one item at time. Press the "Select" switch to select the highlighted item. On keyboards, the row-column scanning method is used (see below).
- **Row-column.** Press the "Next" switch to scan your screen one row at a time. Press the "Select" switch to select a row. Then, press "Next" to move through the items in that row. Press "Select" to select the item you want. This method is often faster than Row-column (keyboard only).
- **Option scanning.** This option is only available if Auto-scan is not selected.

For more details, refer to instructions for setting up switch access.

Scanning highlight style

You can choose the color and thickness of the highlighting on your screen. On the Switch Access Preferences screen, select **Scanning highlight style**. If you're using option scanning, you can choose each option's highlight.

Auto-scan

This option is only available if you haven't selected option scanning.

For details about auto-scanning, refer to instructions for setting up switch access.

Assign keys for scanning

You can assign keys or switches to scanning actions.

On the Switch Access Preferences screen, touch **Assign Keys for Scanning**. Touch the action that you'd like to assign. The dialog displays the list of keys currently assigned to the action. Press a key or switch to add it to the list of keys that perform that action. To remove the key, press it again.

Two examples of customized scanning keys are below.

Multiple keys or switches for a single action

When the dialog to assign a switch to an action is open, you can press multiple keys or switches to assign all of them to that action. This option can be helpful if you're using a standard keyboard as your switch, and you'd like the entire keyboard to act as a single switch.

Assign a "Previous" switch

A "Previous" key or switch reverses your last scanning choice. Note that "Previous" doesn't undo actions, such as opening an app. "Previous" only affects the highlighting of items on the screen.

- If you're using step scanning, "Previous" moves your highlighting in the opposite direction from "Next."
- If you're using option scanning, "Previous" undoes your last highlighting choice.

Assign keys to actions

If you're using multiple switches, you can assign switches to specific actions. For example, you might want to assign a certain key to the Home button. On the Switch Access Preferences screen, touch **Assign Keys to Actions**.

The following actions apply to the currently highlighted view. (Note: If you're using option scanning with more than two switches, these actions don't work consistently because multiple items can be highlighted at once.)

Action	Description
Scroll forward	Scroll forward one page if the highlighted item is in a scrollable view.
Scroll backward	Scroll backward one page if the highlighted item is in a scrollable view.
Long press	Long-press the highlighted item.

The following actions apply to the Android device. These actions work with any scanning method.

Action	Description
Back	Press the Android Back button.
Home	Press the Android Home button.
Notifications	Open Notifications.
Quick Settings	Open Quick Settings.
Recent apps/Overview	Press the Android Recent apps/Overview button.

Automatically start scanning

By default, you need to press a switch to start scanning. To let scanning start automatically without pressing a switch each time you unlock the device or move to a new screen, turn on **Automatically start scanning**.

Turn off switch access

This information applies only to devices running Android 5.0 and higher.

To turn off switch access, follow these steps:

1. Navigate to **Settings > Accessibility > Switch Access**.
2. Slide the Switch Access setting to the **Off** position.

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Captions

> This information applies only to devices running Android 4.4 and higher.

You can turn on captions for your device and specify options (language, text, and style) for closed captioning.

To enable or disable captions, follow these steps:

1. Go to **Settings > Accessibility > Captions**.
2. Set the switch to the on or off position.

When captions are enabled, you can select the following settings in **Settings > Accessibility > Captions**:

- Language: Select the language in which you want captions to appear.

- Text size: Select the size for your caption text.
  - Very small
  - Small
  - Normal
  - Large
  - Very large
- Caption style: Select the style and color for your caption text and background.
  - White on black
  - Black on white
  - Yellow on black
  - Yellow on blue
  - Custom. This option allows you to customize the caption style. If you select Custom, you can then select the following additional options in **Settings > Accessibility > Captions**:
    - Font family: Choose from a list of font families, such as Serif or Cursive.
    - Text color: Select the color for the caption text.
    - Text opacity: Choose 25%, 50%, 75%, or 100%.
    - Edge type: Caption text can have various edge styles.
    - Edge color: If you select an edge type for the caption text, you can then select the edge color.
    - Background color: Select the color for the background.
    - Background opacity: Choose 25%, 50%, 75%, or 100%.
    - Caption window color: Select the color for the bar that extends across the bottom of the window.
    - Caption window opacity: Choose 25%, 50%, 75%, or 100%.

Your caption settings might not apply to certain applications.

Magnification gestures

Magnification gestures enable you to temporarily magnify what's on your screen.

To enable or disable magnification gestures, follow these steps:

1. Go to **Settings > Accessibility > Magnification gestures**.
2. Set the switch to the on or off position.

When magnification gestures are enabled, you can magnify, pan, and zoom in the following ways:

- Zoom in or out by triple-tapping the screen. Then, while zoomed in, you can:
  - Drag two or more fingers to pan across the screen.
  - Pinch two or more fingers together or spread them apart to adjust the zoom level.
  - Note: If you enter or exit an app when zoomed in, you automatically zoom out. Simply triple-tap to zoom in again.
- Temporarily magnify what's under your finger by triple-tapping and holding. In this magnified state, you can:
  - Drag your finger to explore different parts of the screen.
  - Lift your finger to return to your previous state.
  - Note: Triple-tap for magnification works everywhere except the keyboard and navigation bar.

Large text

The large text setting increases the text size on your device to the largest available.

To enable or disable the large text setting, follow these steps:

1. Go to **Settings > Accessibility**.
2. Select **Large text**.

For more fine-grained control over font size, go to **Settings > Display > Font size**.

The large text setting doesn't apply to the Google Chrome app, which has its own text scaling control.

High contrast text

> This information applies only to devices running Android 5.0 and higher.

High contrast makes text easier to read on your device. This feature fixes the text color as either black or white, depending on the original text color.

To enable or disable high contrast text, follow these steps:

1. Go to **Settings > Accessibility**.
2. Select **High contrast text**.

High-contrast text is currently an experimental feature, so it might not work correctly everywhere on your device.

Power button ends call

When this setting is enabled, you can simply press your device's power button to end a call. This setting can make it faster and easier to hang up.

To enable or disable this setting, follow these steps:

1. Go to **Settings > Accessibility**.
2. Select **Power button ends call**.

Auto-rotate screen

When this setting is enabled, the screen automatically rotates when you move your phone between portrait mode and landscape mode.

To enable or disable this setting, follow these steps:

1. Go to **Settings > Accessibility**.
2. Select **Auto-rotate screen**.

If you're using TalkBack, you might wish to disable this setting, since rotating the screen can interrupt spoken feedback.

Speak passwords

This setting controls TalkBack spoken feedback as you type passwords.

- Enabled: Password characters are announced audibly like any other typed characters.
- Disabled: Password characters are only audible via headset. (To protect your privacy, this setting is disabled by default.)

To enable or disable this setting, follow these steps:

1. Go to **Settings > Accessibility**.
2. Select **Speak passwords**.

Accessibility shortcut

The accessibility shortcut allows you to enable TalkBack quickly, without the use of sight.

To enable or disable the accessibility shortcut, follow these steps:

1. Go to **Settings > Accessibility > Accessibility shortcut**.
2. Set the switch to the on or off position.

When the accessibility shortcut is enabled, you can turn on TalkBack by following these two steps:

1. Press and hold the power button until you hear a sound or feel a vibration.
2. Touch and hold two fingers until you hear audio confirmation.

This feature can be useful if your device has multiple users. Use the shortcut on the lock screen to temporarily enable accessibility until the device is unlocked.

Text-to-speech output

To specify text-to-speech settings for your device, go to **Settings > Accessibility > Text-to-speech output**.

The following options are available on the Text-to-speech screen:

- Preferred engine: The default text-to-speech engine choices vary by device. Options can include Google's Text-to-speech engine, the device manufacturer's engine, and any third-party text-to-speech engines that you've downloaded from the Google Play Store.

- Engine settings: To change the settings for your selected text-to-speech engine, select Settings next to the name of your preferred engine . You can then edit the following settings:
  - Language: Choose "Use system language" or select a different language from the list.
  - Settings for Google Text-to-speech Engine:
    - Auto-update voices: Select to automatically update voices.
    - Use Wi-Fi only: Download voices data using only Wi-Fi. This option conserves data usage.
  - Install voice data: Select this option to install voice data required for speech synthesis.
- Speech rate: Select the speed at which text is spoken. Options include:
  - Very slow
  - Slow
  - Normal
  - Fast
  - Faster
  - Very fast
  - Rapid
  - Very rapid
  - Fastest
- Listen to an example: Select this option to hear a short demonstration of speech synthesis.

- Default language status: Here your device displays the current status of your default language (e.g. "fully supported"). The default language is the language selected in your preferred Text-to-speech engine.

Touch and hold delay

This setting adjusts the amount of time before your touch on the screen becomes a touch and hold.

A longer touch and hold delay means that you need to keep your finger in the same place for longer before your touch becomes a touch and hold. If you find that you accidentally touch and hold when you intend to tap, consider choosing a longer delay.

To adjust the touch and hold delay, follow these steps:

1. Go to **Settings > Accessibility > Touch and hold delay**.
2. Select **Short**, **Medium**, or **Long**.

More about the "touch and hold" gesture

"Touch and hold" is a common gesture on Android devices. It means that you touch an item on the screen and don't lift your finger until the item responds. Many times, touch and hold lets you take action on something on your screen. For example, to move an app icon on your home screen, touch and hold the icon, then drag it to the new location. Sometimes touch and hold is called a "long press."

Welcome to the Nexus Help Center

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  - Nexus hardware
  - What comes with Nexus devices
  - Nexus Player
  - Troubleshoot issues
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- \+ Explore your Nexus device
- \+ Use your apps
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- \+ Device support

Check and update your Android version

You can see your device's Android version number and check for Android software updates at any time.

Check what Android version you have

To see what version of Android you have:

1. Open your device's Settings app .
2. Scroll to the bottom and tap **About phone** or **About tablet**.
3. Under "Android version," the number shown is your device's Android version number.

Get the latest Android updates

When a new Android system update is available for your device, you'll get a notification.

Tip: During Android updates, plug in your device and connect to Wi-Fi.

Update when you get a notification

To download and install an Android update after you get a notification:

1. Open the notification.
   - If your device is locked, double tap the notification on the lock screen.
   - If your device is unlocked, swipe down from the top of any screen.
2. To start the update, tap **Download**.

Update without a notification

To check for and install available Android updates:

1. Open your device's Settings app .
2. Scroll to the bottom and tap **About phone** or **About tablet** > **System updates**.
3. Tap **Check for update**. If an update is available, tap **Download**.

Can't download or install latest Android update

If you get an update notification, but your device won't install the latest Android version, try these troubleshooting steps.

Clear space after "insufficient storage available" message

If a message says that your device can't update because it has insufficient storage available, try clearing your apps' cached data.

Clearing cached data won't delete any personal information.

To clear your apps' cached data:

1. Open your device's Settings app.
2. Scroll down and tap **Storage & USB** > **Cached data**.
3. When asked if you want to clear cached data, tap **OK**.

If you still don't have enough storage space for the update after clearing cached data, you can uninstall apps that you don't use. You can also delete downloaded files. Learn how to optimize memory use on your device.

Try again after an unsuccessful update

If an update doesn't install successfully, your device will automatically try again over the next few days. You may not see the update as available in your Settings app until your device is ready to automatically try again.

To manually check for the update again after an unsuccessful installation:

1. Wait at least 24 hours.
2. Open your device's Settings app.
3. Scroll to the bottom and tap **About phone** or **About tablet** > **System updates**.
4. Tap **Check for update**. If the update is available, tap **Download**.

Timing for Android software updates

When new updates reach your device depends on your device type and your carrier.

Nexus devices

Android version updates

These Nexus devices get the latest version of Android directly from Google:

- Nexus 5X
- Nexus 6P
- Nexus 6
- Nexus 5
- Nexus 4
- Nexus 9
- Nexus 7
- Nexus 10

After an update is available, it can take up to two weeks to reach your device. Based on your carrier, it may take longer than two weeks after release to get an update.

Security patches

Nexus devices get updates for security issues documented in our Public Nexus Security Bulletins.

To see when your device last got a security patch:

1. Open your device's Settings app.
2. Scroll to the bottom and tap **About phone** or **About tablet**.
3. Under "Android security patch level," see the date of your device's latest security patch.

How long your Nexus will get updates

After a certain period, Google can no longer guarantee that a device will get version updates or security patches.

Nexus devices receive:

- **Android version updates**
  For at least two years from when the device became available on the Google Store.
- **Security patches**
  For the longer of 3 years from availability or 18 months from when the Google Store last sold the device.

Device	No guaranteed Android version updates after
Nexus 6P	September 2017
Nexus 5X	September 2017
Nexus 9	October 2016
Nexus 6	October 2016
Nexus 5	October 2015
Nexus 7 (2013)	July 2015
Nexus 10	November 2014

Android One devices

Android One phones get the latest version of Android from Google's hardware partners. Google's partners send updates based on their schedules, trying to get them to you as soon as possible.

When your Android One will get updates

After an update is available, it can take up to two weeks to reach your phone. When the update is ready to be installed on your phone, a message on your phone will say, "System update available." You'll need to connect to the Internet to get the notification and to download the software.

How long your Android One will get updates

All partners have committed to giving software updates for at least 18 months after the phone's launch. All Android One phones will get at least one major software update and several smaller security updates.

Google Play edition devices

Google Play edition devices get updates from the device manufacturers, not directly from Google. Google works closely with the manufacturers to provide system updates shortly after a new Android version is released.

When your device will get updates

After an update is available, it can take up to two weeks to reach your device. Based on your carrier, it may take longer than two weeks after release to get an update.

How long your device will get updates

Google Play edition devices may not receive the latest version of Android if they fall outside of the update window, which is usually around 18 months after a device has been released.

Related links

- Send feedback about your device to Google
- Share diagnostics information with Google

Nexus tech specs

Check out the tech specs for the latest Nexus devices. If you're interested in buying a Nexus device, visit the Google Store.

Phones

Nexus 5X

Operating System	Android 6.0, Marshmallow
Display	5.2 inches FHD (1920 x 1080) LCD at 423 ppi Corning® Gorilla® Glass 3 Fingerprint- and smudge-resistant oleophobic coating
Cameras	Rear camera • 12.3 MP[1] • 1.55 µm pixels • f/2.0 aperture • IR laser-assisted autofocus • 4K (30 fps) video capture • Broad-spectrum CRI-90 dual flash Front camera • 5 MP • 1.4 µm pixels • f/2.0 aperture

Processors	Qualcomm® Snapdragon™ 808 processor, 1.8 GHz hexa-core 64-bit Adreno 418 GPU
Storage[2] & Memory	Internal storage: 16 GB or 32 GB RAM: 2 GB LPDDR3
Size[3]	147 x 72.6 x 7.9 mm
Weight	136 grams
Colors	Carbon Quartz Ice
Media	Single front-facing speaker 3 microphones (1 front, 1 top, 1 bottom)
Battery[4] & Charging	2,700 mAh non-removable battery Standby time: up to 420 hours Talk time: up to 20 hours Internet use time (Wi-Fi): up to 9 hours Internet use time (LTE): up to 8 hours Video playback: up to 10 hours Audio playback: up to 75 hours Fast charging: up to 4 hours of use from only 10 minutes of charging[5] USB Type-C 15W charging
Wireless & Location	LTE cat. 6 Wi-Fi 802.11 a/b/g/n/ac 2x2 MIMO, dual-band (2.4 GHz, 5.0 GHz) Bluetooth 4.2 NFC GPS / GLONASS Digital compass *Wi-Fi use requires 802.11 a/b/g/n/ac access point (router). Syncing services, such as backup, require a Google Account.*
Sensors	Nexus Imprint sensor Android Sensor Hub Accelerometer Gyroscope Barometer Proximity sensor Ambient light sensor Hall sensor