

Setting up the development environment

This page will help you install and build your first React Native app.

If you are new to mobile development, the easiest way to get started is with Expo Go. Expo is a set of tools and services built around React Native and, while it has many [features](#), the most relevant feature for us right now is that it can get you writing a React Native app within minutes. You will only need a recent version of Node.js and a phone or emulator. If you'd like to try out React Native directly in your web browser before installing any tools, you can try out [Snack](#).

If you are already familiar with mobile development, you may want to use React Native CLI. It requires Xcode or Android Studio to get started. If you already have one of these tools installed, you should be able to get up and running within a few minutes. If they are not installed, you should expect to spend about an hour installing and configuring them.

Expo Go Quickstart

React Native CLI Quickstart

Follow these instructions if you need to build native code in your project. For example, if you are integrating React Native into an existing application, or if you ran "prebuild" from Expo to generate your project's native code, you'll need this section.

The instructions are a bit different depending on your development operating system, and whether you want to start developing for iOS or Android. If you want to develop for both Android and iOS, that's fine - you can pick one to start with, since the setup is a bit different.

Development OS

macOS

Windows

Linux

Target OS

Android

iOS

Installing dependencies

Installing dependencies

You will need Node, the React Native command line interface, a JDK, and Android Studio.

While you can use any editor of your choice to develop your app, you will need to install Android Studio in order to set up the necessary tooling to build your React Native app for Android.

Node

Follow the [installation instructions for your Linux distribution](#) to install Node 16 or newer.

Java Development Kit

React Native currently recommends version 11 of the Java SE Development Kit (JDK). You may encounter problems using higher JDK versions. You may download and install OpenJDK from [AdoptOpenJDK](#) or your system packager.

Android development environment

Setting up your development environment can be somewhat tedious if you're new to Android development. If you're already familiar with Android development, there are a few things you may need to configure. In either case, please make sure to carefully follow the next few steps.

1. Install Android Studio

[Download and install Android Studio](#). While on Android Studio installation wizard, make sure the boxes next to all of the following items are checked:

- Android SDK
- Android SDK Platform
- Android Virtual Device

Then, click "Next" to install all of these components.

If the checkboxes are grayed out, you will have a chance to install these components later on.

Once setup has finalized and you're presented with the Welcome screen, proceed to the next step.

2. Install the Android SDK

Android Studio installs the latest Android SDK by default. Building a React Native app with native code, however, requires the Android 13 (Tiramisu) SDK in particular. Additional Android SDKs can be installed through the SDK Manager in Android Studio.

To do that, open Android Studio, click on "Configure" button and select "SDK Manager".

The SDK Manager can also be found within the Android Studio "Preferences" dialog, under **Appearance & Behavior** → **System Settings** → **Android SDK**.

Select the "SDK Platforms" tab from within the SDK Manager, then check the box next to "Show Package Details" in the bottom right corner. Look for and expand the Android 13 (Tiramisu) entry, then make sure the following items are checked:

- Android SDK Platform 33
- Intel x86 Atom_64 System Image Or Google APIs Intel x86 Atom System Image

Next, select the "SDK Tools" tab and check the box next to "Show Package Details" here as well. Look for and expand the "Android SDK Build-Tools" entry, then make sure that 33.0.0 is selected.

Finally, click "Apply" to download and install the Android SDK and related build tools.

3. Configure the ANDROID_HOME environment variable

The React Native tools require some environment variables to be set up in order to build apps with native code.

Add the following lines to your `$HOME/.bash_profile` or `$HOME/.bashrc` (if you are using `zsh` then `~/.zprofile` or `~/.zshrc`) config file:

```
export ANDROID_HOME=$HOME/Android/Sdk
export PATH=$PATH:$ANDROID_HOME/emulator
```

```
export PATH=$PATH:$ANDROID_HOME/platform-tools
```

`.bash_profile` is specific to `bash`. If you're using another shell, you will need to edit the appropriate shell-specific config file.

Type `source $HOME/.bash_profile` for `bash` or `source $HOME/.zprofile` to load the config into your current shell. Verify that `ANDROID_HOME` has been set by running `echo $ANDROID_HOME` and the appropriate directories have been added to your path by running `echo $PATH`.

Please make sure you use the correct Android SDK path. You can find the actual location of the SDK in the Android Studio "Preferences" dialog, under **Appearance & Behavior** → **System Settings** → **Android SDK**.

Watchman

Follow the [Watchman installation guide](#) to compile and install Watchman from source.

Watchman is a tool by Facebook for watching changes in the filesystem. It is highly recommended you install it for better performance and increased compatibility in certain edge cases (translation: you may be able to get by without installing this, but your mileage may vary; installing this now may save you from a headache later).

React Native Command Line Interface

React Native has a built-in command line interface. Rather than install and manage a specific version of the CLI globally, we recommend you access the current version at runtime using `npx`, which ships with Node.js. With `npx react-native <command>`, the current stable version of the CLI will be downloaded and executed at the time the command is run.

Creating a new application

If you previously installed a global `react-native-cli` package, please remove it as it may cause unexpected issues:

```
npm uninstall -g react-native-cli @react-native-community/cli
```

React Native has a built-in command line interface, which you can use to generate a new project. You can access it without installing anything globally using `npx`, which ships with Node.js. Let's create a new React Native project called "AwesomeProject":

```
npx react-native@latest init AwesomeProject
```

This is not necessary if you are integrating React Native into an existing application, if you "ejected" from Expo, or if you're adding Android support to an existing React Native project (see [Integration with Existing Apps](#)). You can also use a third-party CLI to init your React Native app, such as [Ignite CLI](#).

[Optional] Using a specific version or template

If you want to start a new project with a specific React Native version, you can use the `--version` argument:

```
npx react-native@X.XX.X init AwesomeProject --version X.XX.X
```

You can also start a project with a custom React Native template with the `--template` argument.

Preparing the Android device

You will need an Android device to run your React Native Android app. This can be either a physical Android device, or more commonly, you can use an Android Virtual Device which allows you to emulate an Android device on your computer.

Either way, you will need to prepare the device to run Android apps for development.

Using a physical device

If you have a physical Android device, you can use it for development in place of an AVD by plugging it in to your computer using a USB cable and following the instructions [here](#).

Using a virtual device

If you use Android Studio to open `./AwesomeProject/android`, you can see the list of available Android Virtual Devices (AVDs) by opening the "AVD Manager" from within Android Studio. Look for an icon that looks like this:



If you have recently installed Android Studio, you will likely need to [create a new AVD](#). Select "Create Virtual Device...", then pick any Phone from the list and click "Next", then select the **Tiramisu** API Level 33 image.

We recommend configuring [VM acceleration](#) on your system to improve performance. Once you've followed those instructions, go back to the AVD Manager.

Click "Next" then "Finish" to create your AVD. At this point you should be able to click on the green triangle button next to your AVD to launch it, then proceed to the next step.

Running your React Native application

Step 1: Start Metro

First, you will need to start Metro, the JavaScript bundler that ships with React Native. Metro "takes in an entry file and various options, and returns a single JavaScript file that includes all your code and its dependencies."—[Metro Docs](#)

To start Metro, run following command inside your React Native project folder:

npm **Yarn**

```
yarn start
```

If you're familiar with web development, Metro is a lot like webpack—for React Native apps. Unlike Kotlin or Java, JavaScript isn't compiled—and neither is React Native. Bundling isn't the same as compiling, but it can help improve startup performance and translate some platform-specific JavaScript into more widely supported JavaScript.

Step 2: Start your application

Let Metro Bundler run in its own terminal. Open a new terminal inside your React Native project folder. Run the following:

npm **Yarn**

```
yarn android
```

If everything is set up correctly, you should see your new app running in your Android emulator shortly.

This is one way to run your app - you can also run it directly from within Android Studio.

If you can't get this to work, see the [Troubleshooting](#) page.

Modifying your app

Now that you have successfully run the app, let's modify it.

- Open `App.tsx` in your text editor of choice and edit some lines.
- Press the `R` key twice or select `Reload` from the Dev Menu (`Ctrl` + `M`) to see your changes!

That's it!

Congratulations! You've successfully run and modified your first React Native app.




Now what?

- If you want to add this new React Native code to an existing application, check out the [Integration guide](#).

If you're curious to learn more about React Native, check out the [Introduction to React Native](#).

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