Chapter 1 – Unity APK

VRA 705

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Topics covered

- ❖ Unity APK
- ❖ Unity Remote

APK (Android Package Kit)

Android environment*

The creation of a Unity application for Android requires setting up a Unity project to support Android. To support Android, a Unity project requires the following dependencies:

❖ The **Android Build Support** module.

❖ The Android Software Development Kit (SDK).

❖ The Native Development Kit (NDK).

❖ A Java Development Kit.

Installing dependencies*

You use the Unity Hub to install Unity distributes
dependencies below:
Android Build Support, Android SDK & NDK Tools, and
OpenJDK.

	PLATFORMS	DOWNLOAD SIZE	SIZE ON DISK
✓	Android Build Support	354.49 MB	1.76 GB
✓	Android SDK & NDK Tools	992.82 MB	2.78 GB
✓	OpenJDK	67.2 MB	145.91 MB

Above, Unity Hub displays the three dependency modules.
NB: Unity distributes dependencies are considered as modules.

Unity APK

- An APK (Android Package), also referred to as an Android Package Kit, is a file format that contains a Unity project, bundling all code and assets together for easy distribution and installation on Android devices.
- When installed on an Android device, the APK functions as a standalone application.
- This file format is compatible with different versions of the Android operating system, although compatibility relies on specific requirements set within Unity's settings for running the application.

Google play store (APK and OBB)

APK expansion files provide a practical solution for addressing the size limitations imposed by the Google Play Store on app sizes, especially for games that need to stay within a 100MB limit. Where the Unity game's size exceeds 100MB, developers must divide the output package into two components: a primary APK and an expansion file OBB (Opaque Binary Blob).

To split the app output package into APK and OBB: open the Player settings (menu: Edit > Project Settings , then select the Player category), and in the Publishing Settings panel, enable the Split Application Binary property.

APK and OBB (Cont)

The naming convention makes it easy to identify the APK and the associated expansion file for your application.

This convention requires that the application name be followed by ".main.obb". For instance, if your app is named "my-app", then the APK file will be "my_project_app.apk", and the expansion file will be "my_project_app.main.obb". This naming format simplifies the process of identifying the associated APK and expansion files.

Build your application for Android

The game engine Unity can build Android applications in the following publishing formats:

❖ Android Package (.apk)

❖ App bundle (.aab)

NB: Unity builds Android applications in the APK publishing format by default.

Build your application for Android (Cont)

To build a Unity application for Android you should do as follow:

To build your Unity application for Android:

1. Select File > Build Settings.

2. From the list of platforms in the Platform pane, select Android. *If Android is greyed out, set up your project for Android development.*

3. Click either Build or Build and Run.

4. Select the destination and Click Save.

Build your application for Android (Cont)

Device list doesn't show the target device:

- Disconnect and reconnect it (If this doesn't solve the issue)
- Double-check that the USB connection is correctly established.

Key points

❖ Creating a Unity application for Android requires setting up a Unity project to support Android along with Unity project dependencies such as The Android Build Support module, The Android Software Development Kit (SDK), the Native Development Kit (NDK), and The Java Development Kit.

❖ Unity builds Android applications in the APK publishing format by default.

Unity Remote

Unity Remote*

The Unity Remote is a tool that can be downloaded to facilitate Android, iOS, and tvOS development. It links the target device to the Unity Editor, which then displays the Editor's visual output on the target device's screen at a reduced frame rate.

Additionally, the Unity Remote sends live feedback or inputs from the target device back to the Unity project, allowing developers to understand how an application appears and behaves on the device without having to create a build.

Unity Remote Cont

Setting up Unity Remote requires a few steps as follow:

- Download and install Unity Remote on the target device. Setup a USB connection between the device and your computer.
- Connect the Unity Editor to Unity Remote to complete the setup.
- Turn on USB debugging on the target device.

Connect Unity Remote to the Unity Editor

You can establish a connection between the Unity Editor and the target device once the target device is connected to your computer. Follow these steps to connect Unity Remote on the target device to the Unity Editor:

- Open Unity, go to: File->build settings-> player settings
- Look for Editor, then, select Any Android Device from Device.