



# Animation and Graphics

Make your apps look and perform their best using Android's powerful graphics features such as OpenGL, hardware acceleration, and built-in UI animations.

## BLOG ARTICLES

---

### Android 4.0 Graphics and Animations

Earlier this year, Android 3.0 launched with a new 2D rendering pipeline designed to support hardware acceleration on tablets. With this new pipeline, all drawing operations performed by the UI toolkit are carried out using the GPU. You'll be happy to hear that Android 4.0, Ice Cream Sandwich, brings an improved version of the hardware-accelerated 2D rendering pipeline.

### Introducing ViewPropertyAnimator

This new animation system makes it easy to animate any kind of property on any object, including the new properties added to the View class in 3.0. In the 3.1 release, we added a small utility class that makes animating these properties even easier.

### Android 3.0 Hardware Acceleration

Hardware accelerated graphics is nothing new to the Android platform, it has always been used for windows composition or OpenGL games for instance, but with this new rendering pipeline applications can benefit from an extra boost in performance.

## TRAINING

---

### Displaying Bitmaps Efficiently

This class covers some common techniques for processing and loading Bitmap objects in a way that keeps your user interface (UI) components responsive and avoids exceeding your application memory limit.