



Introducing AppCloud

ActiveVideo AppCloud is a virtualized video app platform that delivers content from the world's favorite OTT apps to almost any TV

AppCloud is designed to solve four specific challenges for OTT Providers:

1. Disparate device ecosystem increases cost and slows time to market: Complexity and cost introduced to the development cycle by supporting multiple hardware and OS configurations, extends development and testing time, adds cumbersome updates, certification, and support costs
2. Barriers to market impact reach: Only customers with the latest OTT devices can be served, ignoring the vast installed base of Set-Top and SmartTV devices
3. Forced trade-offs between portability, UX, and Performance: HTML5 versions of OTT apps affect portability, while negatively impacting UX, performance and consistent UX across platforms
4. Brand confusion risks account ownership: The latest app solutions today introduce brand confusion to customers putting content ownership at risk

Overview

AppCloud provides the means to deliver the most recent version of any *10-foot* OTT video app experience to any device, regardless of hardware capabilities or operating system.

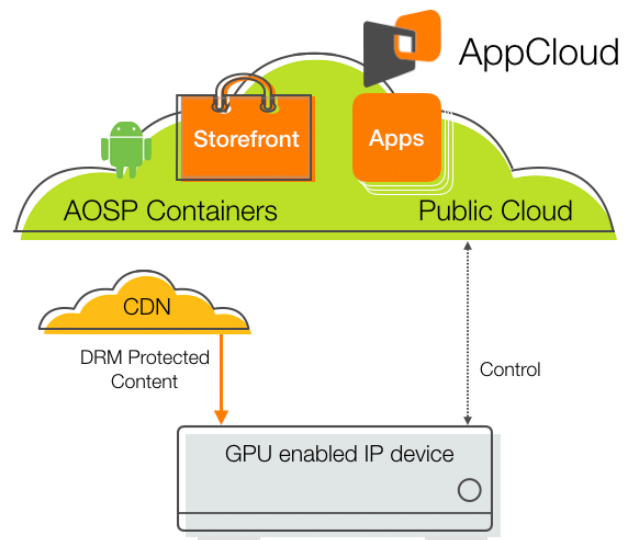
ActiveVideo has addressed the challenges facing OTT Providers by creating a platform that runs first-party Android APKs in the Cloud, instead of on the subscriber device. By taking advantage of unlimited cloud processing power and memory to run both application and player with the highest performance, while delivering the DRM-encoded content stream directly from CDN to the end-user's device maintaining complete content security. The result is an extremely performant, uniform, and high-quality video experience to a heterogeneous mix of TVs, STBs, and devices from a single app, providing the best UX with minimum development effort.

Solving the complexities of development and maintenance

OTT apps are designed to run locally on the device. In this way the marketplace mirrors the mobile phone ecosystem. However three major differences between mobile phones and OTT devices result in a massive development and maintenance headache for OTT Providers. The first is, mobile phones are replaced on average every 32 months, resulting in fewer legacy devices than the STB and Smart TV market, where device lifespan typically exceeds more than 5 years. Secondly, the mobile phone market has just two major platforms, while there are significantly more Smart TV and STB operating systems, the number of which are exponentially multiplied by the variance in middleware vendors and platforms. Lastly, STBs and similar devices are designed to do one thing - decode video, and thus cost tens of dollars rather than hundreds, and as a result the computational power available to mobile phones and STBs varies drastically.

The end result of these disparities is that the target STB device market is wildly more heterogeneous and underpowered than the mobile phone ecosystem and must be maintained much longer, which compounds significantly any OTT development effort designed to reach the *10-foot* consumer market.

ActiveVideo AppCloud offers OTT Providers a solution to these problems by allowing a single app to serve content to hundreds of platform variants. Running Android APKs in the Cloud, and delivering the user experience via a thin client easily ported to the STB, conserves valuable development effort and time-to-market. AppCloud employs first-party apps that have been previously developed for either the Android TV or Fire TV platforms leveraging code re-usability to go to market quickly. Onboarding takes days rather than months, allowing OTT Providers to deliver the most recent version of their app to a disparate audience with the smallest possible overhead.

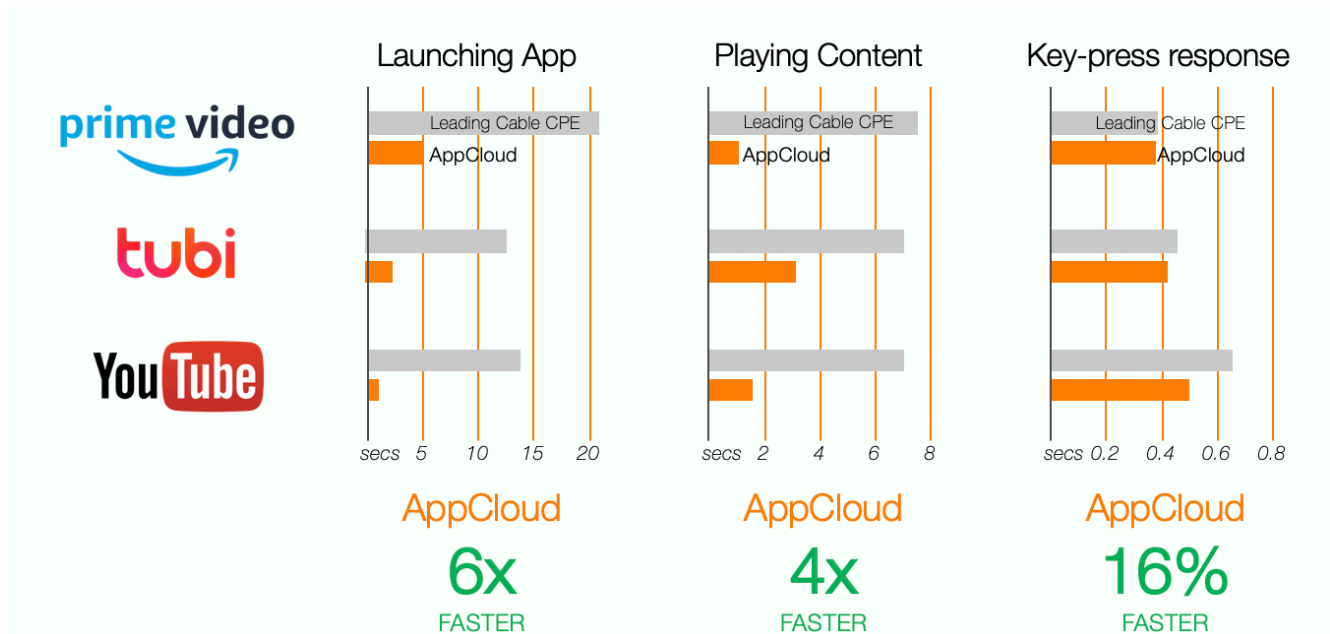


- + AppCloud lives in the public Cloud, delivering apps that run in a virtualised AOSP environment
- + AppCloud delivers direct to GPU-enabled IP devices - no premise equipment needed
- + All DRM and video content is delivered end-to-end, direct to device

Reaching new customers, performance & HTML5

OTT Providers frequently build at least seven versions of their app to reach audiences on the most popular global distribution platforms including Roku, Apple TV, Android TV, and Fire TV. However there is a long-tail of tens (if not hundreds) of variants for regional operators and additional bespoke platforms. These audiences are unlikely to have the latest STB or TV, and are very likely running on dated systems that do not merit additional first-party development effort.

However these audiences in aggregate are significantly valuable. Usually, the way to reach them has been to engage third-party developers to engineer an HTML5 version of the app specific to the target platform. While this may check the box, it creates another platform variant with a potentially modified user experience, and perhaps more importantly creates a significant UX issue in application performance and startup. ActiveVideo AppCloud solves these problems by allowing OTT Providers the option of reusing their existing Android solution to reach these devices without further development effort, preserving a "write once, deploy everywhere" option that vastly increases reach on their most performant and supported platform.



On mobile platforms, native apps are on-average 35% faster than HTML5 apps. This delta is compounded when running HTML5 apps on legacy hardware. In recent tests using three popular OTT apps, AppCloud launched 6x faster than the HTML5 version on the box, the time to first-frame was 4x faster, and the UX interface and key-press response was still slightly faster than the on-box version. With ActiveVideo AppCloud, there is no lowest common denominator that must be supported among devices. They all perform the way developers intended on any device.

No New User Accounts

Most distribution partners -- certainly Roku, Apple, Amazon, and Google -- require users to create an account on their platforms before accessing OTT content. In itself this is understandable and can even be innocuous if left alone. However, this positioning ensures that the users first experience is via another party's platform, and creates a fundamental tension between user ownership, UX priorities, and even monetization. In contrast, AppCloud is a technology platform, not a consumer product: our goal is to make apps available to consumers who want to experience OTT without buying new hardware and creating new user accounts, and aim to make apps available to Cable and IPTV operators, SmartTV manufacturers, and anyone enabling the once-in-a-generation change in how video content is consumed.

Why AppCloud?

For OTT Providers, ActiveVideo AppCloud eliminates the need to develop custom OTT apps for devices running unique operating systems, or those that are underpowered, in effect extending delivery of their UX and content to the widest-possible range of STB and consumer devices designed for the 10-foot experience. It simplifies the certification, testing and app management required to support a heterogenous marketplace of devices, and provides the best possible experience for consumers.



activevideo.com

ActiveVideo brings new TV experiences to life, for as many people on as many devices as possible. Leveraging the power and flexibility of virtualization, we enable the world's leading service providers to offer app-based OTT services, delivering the very best user experiences to their subscribers.

Visit our website or contact your local ActiveVideo representative for more information.

© 2020 ActiveVideo, inc. All rights reserved.