SOLUTION BRIEF

Telecommunications
Cloud-Based Gaming

High-Performance Streaming for Subscription-Based Game Delivery

As computer and video games follow the path of other entertainment to subscription-based streaming models, cloud gaming platforms are the coming wave. Telecommunications provider Etisalat is driving that future forward using technology from Gamestream, running on Intel® architecture.

"Customers have already switched from disc to download. The next paradigm shift is to streaming models for gaming, and Etisalat is proud to be on the leading edge. This technology drives both end-user satisfaction and our competitive advantage."

— Jonathan Haysom,
VP Home Products, Etisalat

In recent years, electronic music distribution has moved decisively away from downloads to streaming services. Financial Times reports a shift in global digital music revenues from 70 percent downloads in 2012 to 73 percent streaming in 2017.[1]

Games are following a similar trend. In an interview with gamesindustry.biz, Electronic Arts CEO Andrew Wilson asserts that streaming and subscription models are poised to disrupt the gaming industry.[2] Accordingly, service providers are working to develop cloud-based infrastructure that can meet gamers' demands for high-definition visuals, at high frame rates, without lag during gameplay.

Early success in this effort has been achieved by Etisalat, a telecommunications provider based in Abu Dhabi, United Arab Emirates (UAE). Using a cloud gaming solution developed by Gamestream, a technology company based in Paris, Etisalat has built an infrastructure based on Intel® architecture that streams 1080p 60 fps gaming with minimal latency to its subscribers.

Etisalat Redefines the End-User Experience for Gaming

Gaming is extremely popular in the UAE, and customers enjoy world-class infrastructure that extends from Etisalat's network core, all the way to customers' homes. As one of the largest telecommunications providers in the world, the company is well positioned for its leadership role in the new era of gaming.

Etisalat's customers are already highly receptive to streaming delivery of games to set-top boxes, in the same way they consume other forms of audio-visual entertainment. The cloud-based gaming platform developed by Gamestream enables Etisalat to provide peak performance and responsiveness that meet the demands of gamers, matched with a broad variety of titles available, including some of the most widely known game franchises as well as selected independent games.

Gamestream Enables Stream Delivery of Games in Full HD

The technology developed by Gamestream runs on Intel architecture-based cloud infrastructure and breaks new ground in end-user gaming experiences. As illustrated in Figure 1, the Gamestream engine operates within a purpose-built cloud operated by Etisalat. Streaming games are delivered directly to subscriber set-top boxes or smart TVs, providing a console-like experience without the console (or the need to buy a permanent license for every new game). Relationships with industry-leading game publishers helps Gamestream offer the latest titles as they become available.

In addition to breakthrough capabilities available today, Gamestream is also working with Intel to optimize its technology for future hardware platforms. Co-engineering between the two companies helps future-proof current implementations for Etisalat and other service providers, while also setting the stage for even more stellar end-user experiences looking ahead.

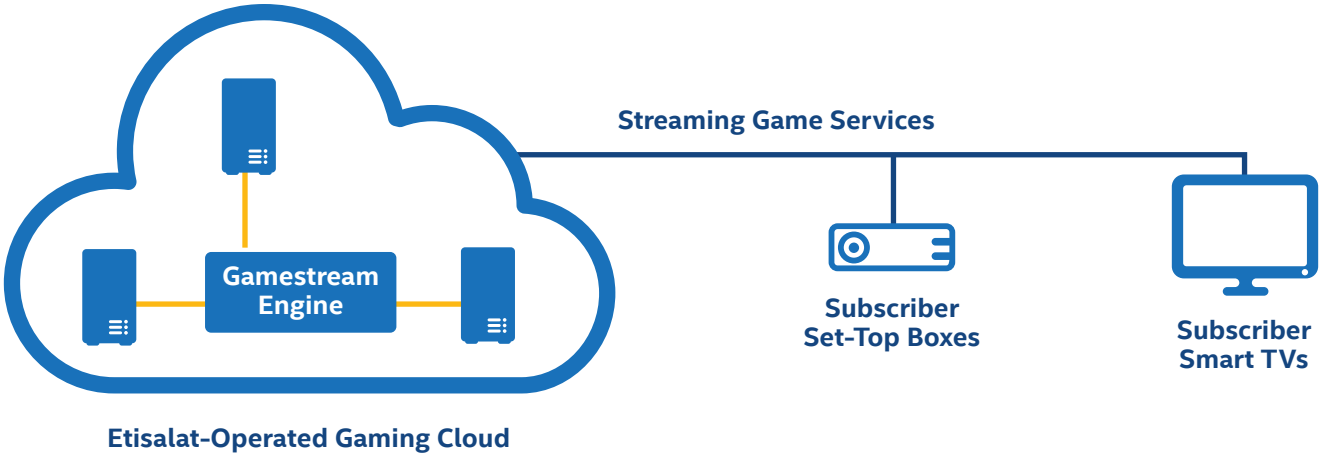

Figure 1. Gamestream technology delivers streaming HD gaming direct to smart TVs and set-top boxes.

"The ability to partner with industry leaders like Etisalat and Intel showcases the innovation built into Gamestream technology. Our joint customers are thrilled with the results."

— Ivan Lebeau, Chairman and CEO, Gamestream

Intel® Architecture Drives up Server Performance and Density

To deliver its cloud gaming solution, Etisalat takes advantage of Gamestream's optimizations for servers based on the Intel® Xeon® processor E3 v5 family with Iris® Pro graphics. This hardware platform is ideally suited for intensive, cloud-based visual processing such as that called for in high-end delivery of streaming games.

- **Iris® Pro graphics P580** provides robust graphics processing with 72 execution units and 128 MB integrated on-package eDRAM memory, plus access to main system memory. Intel® Quick Sync Video improves system responsiveness by using the dedicated media processing capabilities of Intel® Graphics Technology to decode and encode quickly.
- **Tight integration** between graphics, I/O, and compute increase performance and density while reducing power consumption and data movement.
- **Intel® Advanced Vector Extensions 2 (Intel® AVX2)** accelerates floating-point-intensive computations that are prevalent in Gamestream technology's media processing operations.

Etisalat, Gamestream, and Intel bring out the best in each other's technology building blocks, providing end customers with groundbreaking experiences. As telecommunications providers and game publishers all over the world strive to offer next-generation services, more and more of them will be exploring the potential for streaming game delivery. The path to that future is now established for UAE gamers, and they are ready to challenge the rest of the world.

"Visual cloud computing architectures, based on Intel® technology, enable new, exciting use cases like Streaming HD games, which bring new user experiences to the gaming community."

— Lynn Comp, Vice President of Visual Cloud Division, Network Platforms Group, Intel

Learn More

Etisalat: **www.etisalat.ae**

Gamestream: **www.gamestream.biz**

Intel® Xeon® Processors: **www.intel.com/xeon**

[1] Based on research from PwC. Source: https://www.ft.com/content/94c5cdb0-4a26-11e7-a3f4-c742b9791d43.

[2] Source: http://www.gamesindustry.biz/articles/2017-07-27-ea-streaming-plus-subscription-will-be-the-great-disruptor-in-gaming.

0218/MH/MESH/PDF 336319-001