

Akamai Streaming

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Akamai Streaming can distribute and deliver the consistent, reliable, high quality web video and / or audio streams, including on-demand events and live events. The service transfers original streams to the distributed computing platform, Akamai Platform, from the edge of the Internet.

Due to Internet bottlenecks, many consumers have met such kinds of problems or experiences:

- 1) Slow and unreliable startup of streaming,
- 2) Re-buffering interruption time,
- 3) Low quality delivery and so on.

And consumer's experiences are determined by two factors:

- 1) The encoding of the stream,
- 2) The delivery of stream.

So Akamai Streaming involves several technologies to address the second factor:

- 1) It defined and measured four key metrics: Failure rate, Start-up Time, Thinning and Loss, Interruptions.
- 2) Use streaming-measurement agent which is designed to experience, measure, and report on media streams exactly as end users experience them. Akamai agents monitor packet flows into the media player while the measured streams are being played, and thus can accurately report how successfully a stream is being delivered to the player.
- 3) Arrange its streaming agents in a diverse set of networks and geographic locations to measure performance.
- 4) Leverage its distributed monitoring and reporting infrastructure to ensure that its performance agents work very well.
- 5) Run a virtual overlay network on the internet. That is, it uses standard IP connectivity to transport data into the network and then to distribute it to the users.
- 6) Authentication solution allows content providers to authenticate requests for streaming. Such technology contains: secure corporate communications, pay-per-view, content syndication, preventing deep linking, control expiration of content, and so on.

All of these technologies can quickly pinpoint and address any potential problems that the end users may meet, and allocate additional resources to address problems at once. Fig1 will show us how it works. And Fig2 tells us secure streaming

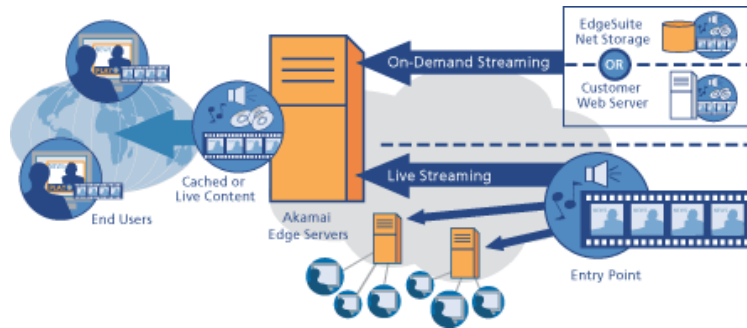


Fig 1: Working Flow

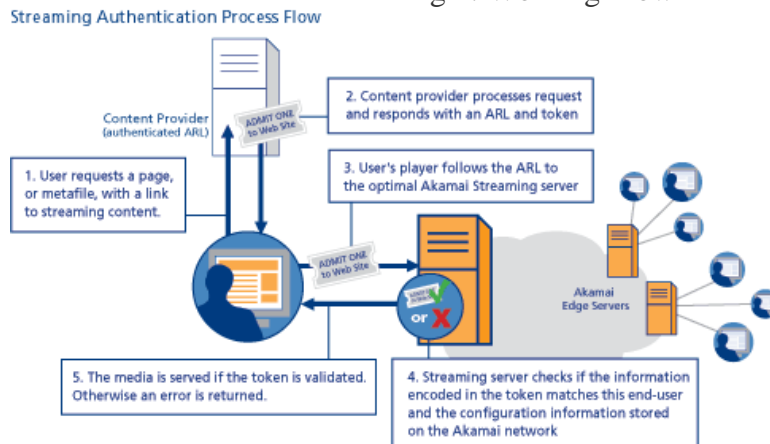


Fig 2: Secure Streaming Process Flow

From Akamai Streaming technologies, we can picture the desirable features: 1) Storage / deliver consistent, reliable high-quality streams on-demand or lively to Akamai Edge Server with small failure rate, start-up time, thinning and loss and interruptions at the edge of Internet; 2) Overcome the problem of the jerkiness of video and dropped out audio. 3) Support three major encoding formats -- Apple® QuickTime™, Microsoft® Windows Media™, and RealSystem® G2. 4) It can be used for both narrowband and broadband. 5) Secure streaming.

There is still more work needed to be done to improve it: 1) Stream quality measuring is important to evaluate the services, although it is difficult to be defined. 2) It offers streaming delivery mainly, but that will be optimized for the delivery of both web content and streaming, because before getting a stream, the individual probably visits lots of pages before he ever watches a stream. 3) Akamai does not do hosting as being the network layer which enables the better delivery for anybody. The final streaming results depend on Akamai and content providers. 4) Another challenge is that the cost is still high relative to the ability to monetize it. 5) It works well with the popular three encoding formats, but how about other formats, because the streaming may have different formats, different bit rates, and different kinds of problems, so have different measurements.

Reference:

- 1) http://productfinder.infoworld.com/search/index/infoworld/sol_summary/64310
- 2) <http://www.urbanfox.tv/articles/streaming/s2leadingedgestream.html>
- 3) <http://www.streamingmedia.com/article.asp?id=6198>