



Ultra-Live VDN: Real-Time Video Streaming

Enhance fan experiences with real-time streaming

Industry Challenges / Need

Despite the major growth of live streaming over internet, there is one substantial challenge – the internet was not built for live video streaming but rather for highly reliable data transport. What is sent will practically always arrive but not always ‘on time’. This makes sense for a world wide web but presents a challenge for live video streaming to OTT devices, to enable fan engagement within video streams – video latency needs to equal the broadcast experience.

Exploring Alternatives

Aside from Video Delivery Networks (VDN), there are currently two other major takes on live streaming.

Fragmented (or tuned) HLS. This is basically video on demand but with shorter file segments. Expected glass-to-glass latencies vary greatly and are typically in the range between 4 and 12 seconds. For use cases where latency and sync are not important this may be the best option.

Realtime protocols such as WebRTC. Expected glass-to-glass latencies are around 300ms. Built for real time communications such as video conferencing, this puts all emphasis on latency and less on maintaining video quality or stability. Furthermore, it does not scale well.

Our Solution

Tata Communications’ Ultra-Live VDN – A Truly Live and Immersive Viewing Experience

Tata Communications’ Ultra-Live VDN solution includes ultra-low latency or ‘real-time’ streaming as well as functionality to configure feeds across devices. The service elevates the live-viewing experience to a whole new level thanks to features such as instant playback, fast channel changes and superior quality. It offers the following crucial benefits.

Lowest Overheads, High Quality of Experience (QoE) Ultra-Live VDN is built from the ground up to optimise live video streaming. The service leverages our unique global fibre network and our proven ability to contribute and deliver live content adhering to the highest standards of quality, interaction and low latency. It utilises a resilient streaming protocol that has been crafted and optimized for live streaming, with minimum overhead and maximum network utilization.	Centralized Presence with Global Reach With an optimized protocol, Ultra-Live VDN’s tolerance for packet loss, round trip delays, jitter and geographical distance is significantly higher than traditional OTT streaming solutions. Edge nodes have been globally deployed to support traffic over the service utilising Tata Communications’ extensive peering relationships with national carriers, ISPs and mobile operators. The result - the widest possible geographic reach at the highest level of quality.	Seamless Second Screen Experience With a configurable ultra-low delay, all devices receive the same content at the same time. Be faster than the normal broadcast or add individual OTT delay to harmonize with your viewer’s local TV service provider.	Embracing 360° The service encompasses a market-leading capability to distribute a 360° experience at extremely low latency. Ultra-Live VDN uses a stateful ABR technology in combination with focal point streaming. The result is a high quality, sub-10Mbps stream, giving an exceptional viewing experience over home Wi Fi-networks. The service also includes sync and rapid switching between multiple 360° streams as well as support for ultra-low latency workflows.
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Exceptional Quality of Experience

Ultra-Live VDN includes a refined adaptive bit rate technology that is “state-aware” of the client’s available bandwidth. This stateful ABR continuously keeps track of each client’s available bandwidth, adapts the bit rate accordingly and provides the highest possible picture quality at any given time. As a result, Ultra-Live VDN improves the customer experiences in two ways - it maintains the highest ABR profile longer and it eliminates the “sine curve” behaviour when switching between different streams, resulting in a game-changing rapid channel-switching experience.

Immersive and Social Live Applications

Millennials cannot be satisfied with just broadcast as it is one-way, un-engaging and not interactive. They expect an engaging, immersive experience, enabled by the interactive nature of the second screen. With Ultra-Live VDN, you can give your customers full control over the OTT experience, opening up opportunities for multi-camera, multi-view applications where viewers can choose their favourite athlete, race car or camera angle. This solution is built on and is part of our end-to-end media solutions ecosystem, a one stop solution for leading media organisations globally. With features that make it a benchmark live OTT technology enabler, it delivers benefits that ensure that all imperatives of live content distributors are met and delivered with consistent success.

How We Do It

Contribution - Contribution is a crucial part of ensuring a well-thought-out streaming experience. Tata Communications can offer several methods to contribute content onto its global Video Connect backbone.

Ingest Point - Tata Communications, by virtue of our global video infrastructure has Video POPs and Edge Locations all over the globe allowing ingest of video streams in a multitude of formats.

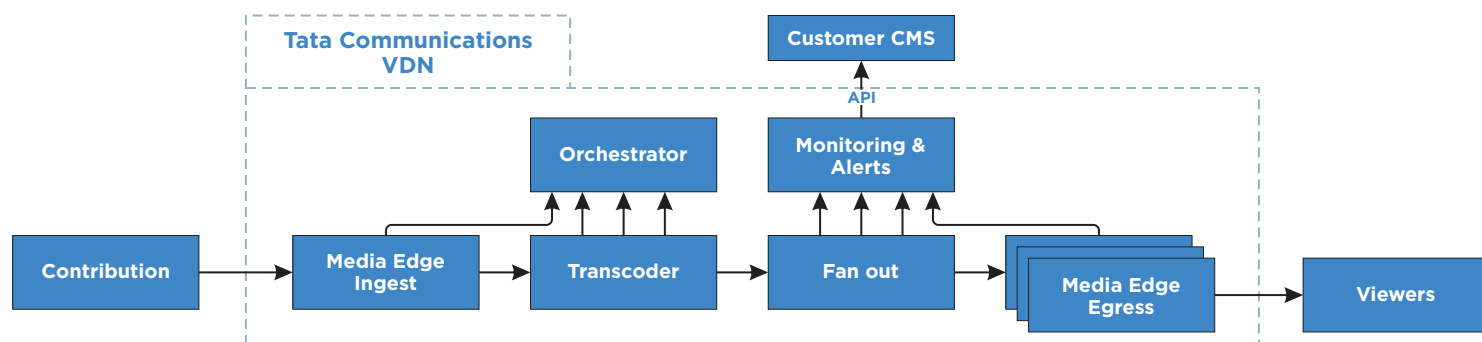
Transcoder - The VDN transcode farm generates streams of different qualities for adaptivity. The bitrates and resolutions can be configured on a per stream basis.

Fan Out - The Fan Out server is responsible for synchronising

streams against a number of different egress locations and Video POPs

Monitoring & Alerts - Monitoring & Alerts are set-up to log user behaviour, quality of service and provide our clients with live data on statistics and performance. API's are available to allow stream and service information to be integrated with external and 3rd party systems.

Video Edge Egress Points - Tata Communications has video edge egress locations across the globe, allowing for a truly global video delivery platform for ultra-low-latency live video streaming. We also have peering arrangements with major domestic ISPs in Europe and the US to allow delivery of live video at scale.



The Tata Communications Advantage

Using **Tata Communications Ultra-Live VDN** for live video streaming yields several advantages over streaming technologies on the market.

Synchronisation - As Ultra-Live Ultra-Live features full control of the buffer, no viewers are left out of sync. The viewing experience is harmonized across devices and locations.

High Quality - Realtime technologies, such as WebRTC may yield very low latencies at the cost of stability. Ultra-Live VDN maintains high video and audio quality between the two.

Compatibility - Ultra-Live VDN works in browsers, from desktop to mobile, even iOS' Safari - as well as apps for Android and iOS. Users can use whichever device they prefer.

Ultra-Low Latency - Most live streaming technologies are using the standards of HLS or Dash for delivery. While reliable and high in quality, this often results in high latency and play head drift. Our Ultra-Live VDN keeps the latency ultra-low, with the option to go sub-second.

Customers Who Have Benefitted from Our Solutions



Future-proof your video streaming strategy by switching to our end-to-end, managed and hybrid ecosystem!
Talk to one of our experts today to: MES@tatacommunications.com