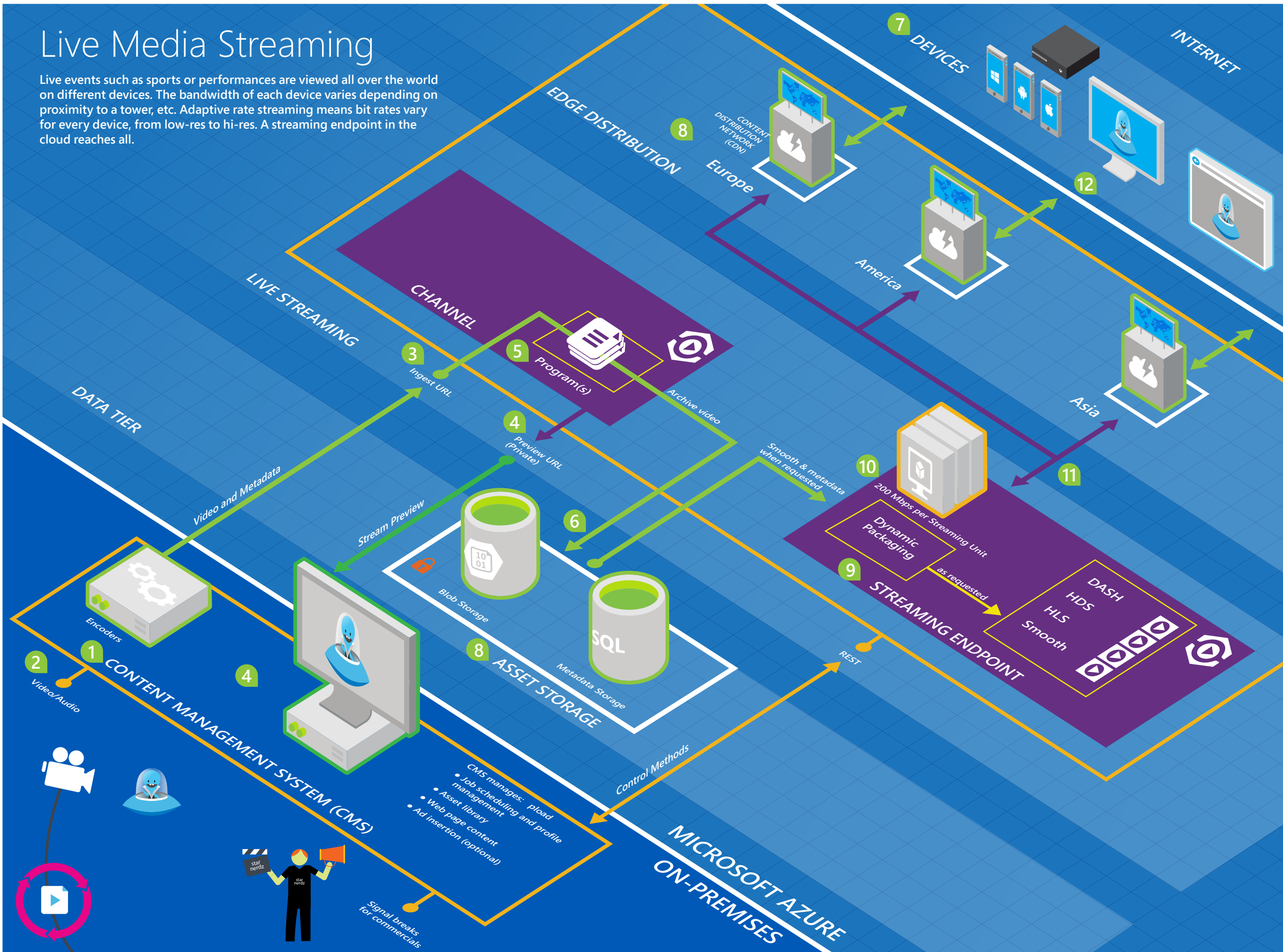


Live Media Streaming

Live events such as sports or performances are viewed all over the world on different devices. The bandwidth of each device varies depending on proximity to a tower, etc. Adaptive rate streaming means bit rates vary for every device, from low-res to hi-res. A streaming endpoint in the cloud reaches all.



- 1 A Content Management System (CMS), such as Ooyala, controls functions of the live broadcast. The system manages all the elements of the live workflow such as encoder configuration, asset management, ad signals, subclips for highlight reels. It also can manage telemetry and system health.
- 2 Live stream content is encoded at multiple bit rates into Smooth or Real Time Messaging Protocol (RTMP) using a hardware encoder. Operators mark breaks in the action for later ad insertion.
- 3 Live stream content is streamed to the channel via HTTP. Optionally use ExpressRoute for fast private transport.
- 4 Preview URL monitors the health of the stream before and during broadcast.
- 5 Programs act on a stream to record it. Different programs can create different recordings of the same stream.
- 6 Streams and associated metadata are saved to Assets in blob storage and an SQL database.
- 7 Devices attempt to consume streaming content via a device specific URL. Devices contain apps built with specific frameworks which can consume the stream.
- 8 If the proper streaming file already exists on the CDN, it's sent to the device. If not, the request is sent to the Streaming Endpoint. The device may be sent a lower quality stream if bandwidth is low.
- 9 Content is dynamically encoded to the specific streaming format required by the device making the request.
- 10 Content is processed using scalable Reserved Units. Each unit can deliver up to 200 Mbps. Additional units start up or shut down based on load.
- 11 The Streaming Endpoint delivers the request stream to the CDN, which propagates it to all geographic regions.
- 12 Devices consume streaming content. Devices run apps built from player framework SDKs.