

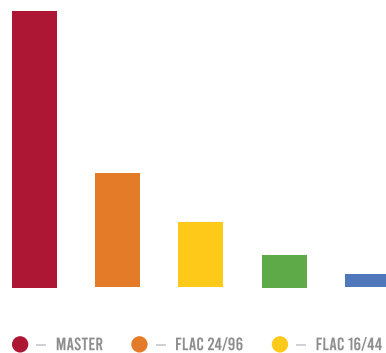
# ADVANTAGES OF USING ORASTREAM

FEATURES	ORASTREAM	OTHERS
SINGLE-SOURCED STORAGE	✓	
SCALABLE AND ADAPTIVE STREAMING	✓	
SEAMLESS AUDIO PLAYBACK	✓	
OPTIMIZES AND GROWS WITH MUSIC BUSINESS	✓	

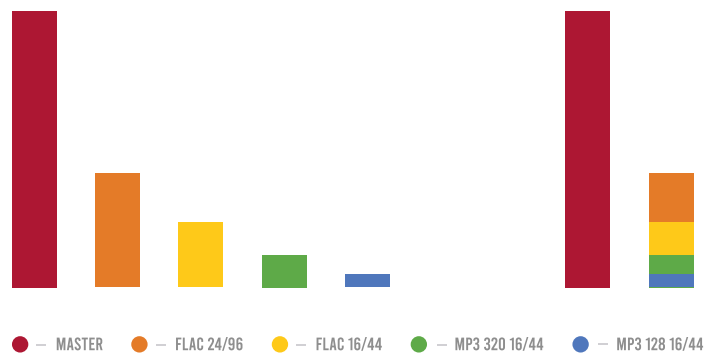
## SINGLE-SOURCED STORAGE

On OraStream, only a singular and highest resolution master is stored and used on production, with support for quality up to 192kHz and 24-bit resolution. In contrast, other music services rely on a multi-profile solution where the same track is subject to being transcoded, lossily to MP3 or AAC and losslessly to FLAC or ALAC (\*usually this is done in various bitrates like 64 / 128 / 320 kbps. For 24-bit content, they are also down-sampled to 16-bit 44.1 kHz). Content releases, royalty reporting and take-downs are easier to manage with our single-sourced solution.

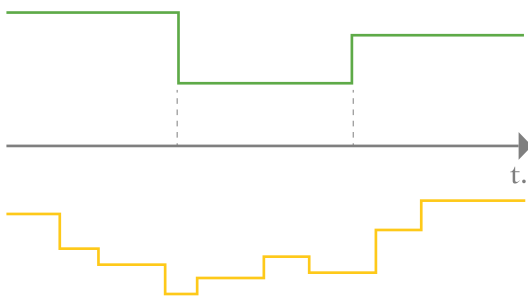
### MULTI-PROFILE (FLAC LOSSLESS, MP3 FORMATS)



### SINGLE-PROFILE (MPEG-4 SLS FORMAT)



### MULTI-PROFILE



### SINGLE-PROFILE

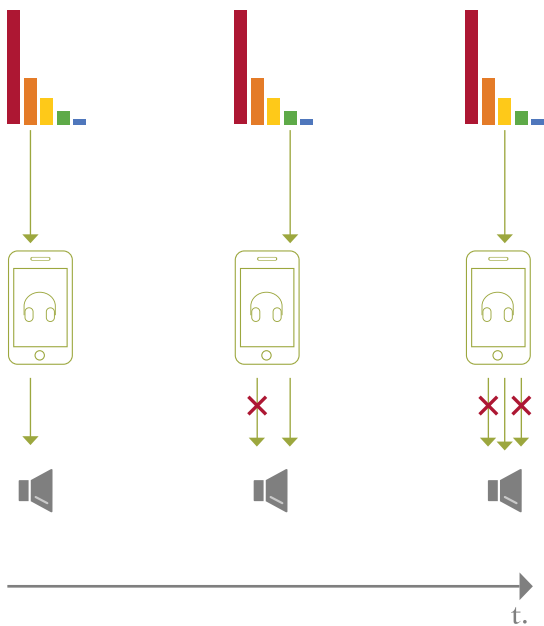
## SCALABLE & ADAPTIVE STREAMING

Based on MPEG-4 SLS, the same source file can be used for adaptive streaming, scaling from 80 kbps to up to 6,000 kbps. This allows high-resolution content to be streamed without any network dropouts. Various streaming quality profiles and audio segment lengths can also be defined ad-hoc (\*typically like 160 / 320 / 1,600 / 3,200 kbps and 15 / 30 / 45 seconds). On the other hand, a multi-profile approach is not flexible and requires all quality profiles and audio segments to be generated before content is ready for production.

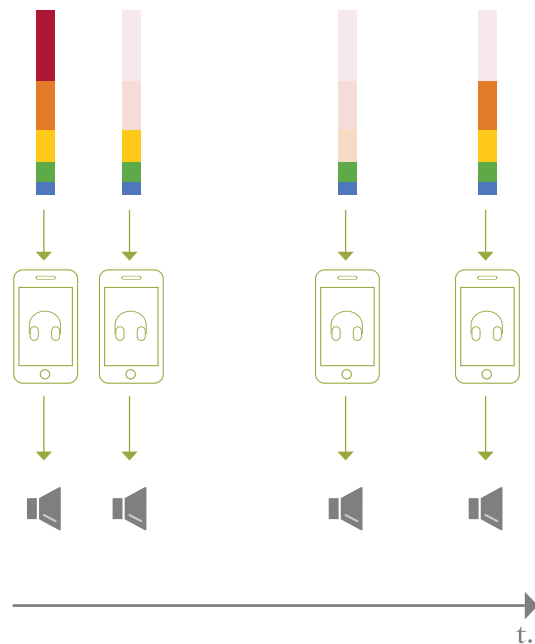
## SEAMLESS AUDIO PLAYBACK

Our single-sourced format is also engineered to work across all platforms, including all modern web browsers, mobile devices (iOS / Android) and desktop computers (Windows / macOS). Audio segments with varying bitrates can be buffered and re-assembled seamlessly for playback at any time and position. All streaming connections are secure, managed and optimized within our players. Gapless playback and automatic sample-rate matching are also supported for an ultimate and transparent listening experience.

### MULTI-PROFILE



### SINGLE-PROFILE



## OPTIMIZES & GROWS WITH MUSIC BUSINESS

In the multi-profile approach, all versions of each track (time-segmented in various bitrates) are stored on the cloud (e.g. Amazon S3) and delivered to customers via a CDN (e.g. Amazon Cloudfront).

Our solution takes it a step further by storing all tracks on an optimal lower-cost cool storage and transferring only those on demand (or popular) to hot storage (\*cool / hot relates to how frequently content is accessed). Content on hot storage is also ephemeral and will be purged after being inactive for a certain period.

To a growing music business, our solution further optimizes bandwidth cost (which may be hundreds of times more than storage cost) by managing the streaming quality and bitrate accessible to music subscribers. If a monthly quota on bandwidth is observed, our scalable solution can also ensure the average streaming volume per user is kept within limits.

