

Play Rates and a Burstware Client's Available Bandwidth

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Summary: This technote discusses the importance of providing media files encoded at a rate suited to the connection speed of clients.

Background

As you plan for the library of audio and video files your Burstware application will serve, you must consider the range of client connection speeds you will need to support.

Burstware's buffer management strategy is designed to ensure that the client buffer always contains sufficient data so that play can continue should network service degrade or be interrupted. However, if the client's average available bandwidth is less than the media play rate, interruptions in play may result.

What Happens When Play Rate Exceeds Average Available Bandwidth

Burstware tolerates variations in available bandwidth or connection speed, as long as the average available bandwidth during the connection session is greater than the encoded bit rate of the media file. While it is acceptable for the connection speed to fall below the play rate from time to time during a session, overall, the average connection speed should exceed the encoded bit rate of the media file.

If a client connection is, on average, *slower* than the play rate of the media, the media file will play from the buffer faster than the network connection allows the buffer to be provisioned, so the buffer level will decrease.

When the client buffer has been depleted, play will stop. Once the buffer has been refilled to the level specified by the **SecondsOfDataToBuffer** parameter, play will restart.



Prevent Problems with a Range of Encoding Rates

To avoid the problems that can result from serving high play rate files to low speed client connections, plan for a range of client connection speeds. Ensure that each of your media files is available in a range of encoded rates, including one that supports users with very slow connections. Users can select the appropriate version, based on their local connection speed, or you can use a bandwidth sniffer to choose for them.

For best results, an end user should be served media files with an encoding rate no higher than the average bandwidth between the client and the server. This allows you to successfully serve multimedia to users with a variety of connections speeds.

Re-Encode Media for Worst Case Connections

Re-encoding media for low speed connections enables you to meet the needs of clients with low bandwidth, while maintaining quality. Tools are available for taking an existing video and re-encoding it at a different bit rate.

Supporting low bandwidth viewers usually involves making some trade-offs. By re-encoding the media, you make the decisions, instead of requiring end users to suffer through unexpected events. If you re-encode a media file, you can decide on an appropriate compromise. For one file, it might be best to sacrifice sound quality by encoding in mono sound, thus allowing better video quality (more frames per second). For another file, the reverse might be preferable.