How to configure MPEG-DASH packetization (mpegdashstreaming)

This article describes properties in Wowza Streaming Engine™ media server software that you can use to control how the MPEG-DASH segmenter splits streams into segments suitable for playback on DASH players.

Note: Wowza Streaming Engine 4.0.0 or later is required.

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Wowza Streaming Engine Manager configuration

You can configure the properties that control how the MPEG-DASH segmenter splits streams in Wowza Streaming Engine™ Manager. Use Streaming Engine Manager to manage the Wowza Streaming Engine media server software.

Configure properties for live streams

1. In the manager Welcome page, click the Applications tab at the top of the page.
2. In the Applications contents panel, click the name of your live application (such as live).
Note: Access to the **Properties** tab is limited to administrators with advanced permissions. For more information, see **Manage credentials**.

4. Click **Edit** in the **MPEG-DASH Streaming Packetizer** properties area. To enable a property, select the **Enabled** check box for the property. You can also change the value for an enabled property from its default setting. All time values are in milliseconds and the values are set on a per-application basis. Refer to the **MPEG-DASH segmenter property reference** below for more information about the individual properties you can use to manage the MPEG-DASH segmenter for live streams.

5. Click **Save**, and then restart the application when prompted to apply the changes.
Note: For more information about how to configure properties, see Configure properties. This article shows how to access and adjust default properties and how to add custom properties in Streaming Engine Manager.

MPEG-DASH segmenter property reference

- **mpegdashChunkDurationTarget** - Sets the duration of each chunk in milliseconds.
- **mpegdashMaxChunkCount** - Sets the maximum number of chunks stored in the available chunk list.
- **mpegdashPlaylistChunkCount** - Sets the number of items returned in the playlist.
- **mpegdashRepeaterChunkCount** - Sets the number of chunks that are immediately sent from the origin to the edge after initial connection. This property is only required for Live Edge application types. A live edge application will have a StreamType of liverepeater-edge in the Application.xml file.

Property details

The audio and video packets from a live encoder enter the Wowza media server and are segmented into chunks based on time. The duration (in milliseconds) of each chunk is controlled by the **mpegdashChunkDurationTarget** property setting. The chunks are added to the available chunk list as they are created. The maximum number of chunks stored in the available chunk list is controlled by the **mpegdashMaxChunkCount** property setting. When a stream is requested by a DASH client, a manifest is returned that contains the \([n]\) most recently added chunks. The number of items \([n]\) returned in the manifest is controlled by the **mpegdashPlaylistChunkCount** setting.

The live stream repeater system is used to deliver a single live stream in an origin/edge configuration to multiple edge servers. The first time an edge server requests a stream, it pulls the previously segmented chunks from the origin to the edge for delivery to the client. The **mpegdashRepeaterChunkCount** property setting controls the number of chunks that are immediately sent from the origin to the edge after the initial connection. It’s best if this setting is equal to or greater than **mpegdashPlaylistChunkCount** but less than **mpegdashMaxChunkCount**.

With Wowza Streaming Engine 4.5.0.02 and later, if you set the
mpegdashRepeaterChunkCount to a value that is equal to or less than 0, the mpegdashPlaylistChunkCount value is used.

**Notes:**

- Chunks must start on a keyframe so it’s best to use a keyframe interval that is factor of the mpegdashChunkDurationTarget setting. For example, if mpegdashChunkDurationTarget is set to 10 seconds, use a keyframe interval of 2, 2.5, 5, or 10 seconds.

- To estimate how much memory is used to store the chunks for a single live stream, use the following formula:

  \[
  \text{total-memory-mb} = \left(\frac{\text{stream-bitrate-kbps}}{(1024\text{-kb-per-mb})*[8\text{-bits-per-byte}]}\right) * \text{mpegdashChunkDurationTarget-seconds} * \text{mpegdashMaxChunkCount}
  \]

  For example, a 500 kilobit per second (Kbps) stream will consume the following amount of memory given the default settings above:

  \[
  \frac{500}{(1024*8)} * 10 * 10 = 6 \text{ MB of memory}
  \]

- You can add the mpegdashMinBufferTime property to specify the minBufferTime value reported in the manifest. To do this, do the following:

  1. On the live application page Properties tab, click Custom in the Quick Links bar.
  2. In the Custom section, click Edit.
  3. Click Add Custom Property, specify the following settings in the Add Custom Property dialog box, and then click Add:

    - **Path** - Select /Root/LiveStreamPacketizers.
    - **Name** - Enter mpegdashMinBufferTime.
    - **Type** - Select Integer.
    - **Value** - Enter a value (in milliseconds) to specify the minBufferTime value reported in the manifest. The default value is 6000
  4. Click Save, and then restart the application when prompted to apply the changes.
You can control the video on demand (VOD) chunk size by adding the `mpegdashChunkDurationTarget` property to your VOD application configuration.

1. In the manager **Welcome** page, click the **Applications** tab at the top of the page.
2. In the **Applications** contents panel, click the name of your live application (such as `vod`).
3. On the VOD application page **Properties** tab, click **Custom** in the **Quick Links** bar.

**Note:** Access to the **Properties** tab in Streaming Engine Manager is limited to administrators with advanced permissions. For more information, see **Manage credentials**.

4. In the **Custom** area, click **Edit**.
5. Click **Add Custom Property**, specify the following custom property settings in the **Add Custom Property** dialog box, and then click **Add**.

   a. In **Path**, select `/Root/Application/HTTPStreamer`
   b. In **Name**, enter `mpegdashChunkDurationTarget`
   c. In **Type**, select **Integer**.
   d. In **Value**, enter a value (in milliseconds) to specify the default VOD chunk size.

6. Click **Save**, and then restart the application when prompted.

**Note:** You can add the `mpegdashMinBufferTime` property to specify the `minBufferTime` value reported in the manifest for VOD streams. To do this, follow the directions, above, for adding the `mpegdashMinBufferTime` property to a live stream, but set the **Path** to `/Root/Application/HTTPStreamer` (not `/Root/Application/LiveStreamPacketizer`).

**XML configuration**

If you configured the properties in Wowza Streaming Engine Manager, you can skip this section. If you make changes to [install-
dir]/conf/[application]/Application.xml, any supported settings are displayed in the manager the next time it’s started. All time values are in milliseconds.

Configure properties for live streams

1. Use a text editor to open the Application.xml file for your live application. Then add the properties described in the MPEG-DASH segmenter property reference above to the / container. Be sure to add the properties to the correct container in Application.xml as there are several such containers in the file.

   mpegdashChunkDurationTarget
   10000
   Integer

   mpegdashMaxChunkCount
   5
   Integer

   mpegdashPlaylistChunkCount
   5
   Integer

   mpegdashRepeaterChunkCount
   -1
   Integer

   mpegdashMinBufferTime
   6000
   Integer

2. Restart the Wowza media server software to apply the changes.

Configure property for VOD streams

1. Open the Application.xml file for your VOD application using a text editor and then add the mpeg-dashChunkDurationTarget property to
the / container. Be sure to add the properties to the correct container in Application.xml as there are several such containers in the file.

```xml
mpegdashChunkDurationTarget
10000
Integer

mpegdashMinBufferTime
6000
Integer
```

2. Restart the Wowza media server software.

**More resources**

**How to control MPEG-DASH fragment IDs and timecodes**

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