

Orchestrate Video MMD Live Guide

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MMD Live Streaming Introduction

Audience: This guide is intended for Limelight Networks Orchestrate Video customers who want to stream live media to desktop, mobile and set-top boxes simultaneously using Limelight Orchestrate Video (LOV) Multi-device Media Delivery Live (MMD Live). Limelight Orchestrate Video's multi-device support enables you to input a live stream, use the Limelight UI to configure your video slots and receive a URL or video player for delivery worldwide to desktop and mobile devices.

Delivering MMD Live

Limelight delivers MMD Live by either Transcode or Transmux.

- Transcoding converts a single input stream into multiple bitrates and formats.
- Transmuxing converts into different formats only. You must provide the stream in your desired bitrate(s).

Transcode

This diagram gives an overview of the process of delivering multi-device media via Transcode.



You send a single-bitrate <u>RTMP</u> stream to the Limelight ingest server. Limelight streaming servers located in all of your target regions deliver live playback to support desktop, set-top and mobile devices across a range of connection speeds. The Limelight Video Player automatically selects the best bitrate for the device. If you use your own video player, the playback URLs provided to you will also allow you to access multiple bitrates.

Transmux

This diagram gives an overview of the process of delivering multi-device media via Transmux.

MMD Live Transmux



You can input up to 8 bitrates per live stream. Your encoder will send these bitrates into the Limelight ingest server and MMD Live will transmux the bitrates into multiple playback formats.

MMD Outputs

- HDS
- HLS
- RTMP
- RTSP
- MSS

Configuration UI

MMD Live is purchased by "slot." A slot is a reserved capacity for you to ingest your live stream into. Slots are of type SD, HD, FHD or Transmux. See section titled, "Inputs and Outputs", for more detail. The Configuration UI allows you to configure slots for transcode and transmux. Customer configurations include:

- bitrates
- frame size/resolution (transcode only)
- slot names and descriptions to help define metadata

activation button

Configuration details are covered in the section titled, "Configuration UI" in this document.

Live Stream Encoders

A client-based live stream encoder is required in order to capture live footage and stream to the ingest servers of MMD Live. All encoders must be able to support the <u>H.264 CODEC</u>. Our list of suggested encoders includes:

Adobe Flash Media Live <u>Encoder</u> 3.x (Website)

Note: After installing Adobe Flash Media Live Encoder (FMLE), you will need to download and install the Limelight Access Adaptor.

- Adaptor for FMLE 3.2 (Download for Windows) (Download for Mac)
- Adaptor for FMLE 3.1 (Download for Windows) (Download for Mac)
- Telestream Wirecast (Website)
- Envivio (Website)
- Osprey (Website)
- Haivision Kulabyte (Website)

Encoder Settings Hints

It's important to have all your encoder settings correct in order to stream successfully to MMD Live. Here are some things to check when configuring your encoder:

- **Primary and Backup:** MMD Live provides redundant ingest points for your live stream to give a robust failover capability during maintenance periods and outages. However, it requires your encoder to publish to both Primary and Backup ingests, with Timecode Synchronization, to best take advantage of this feature.
- **Timecode:** many encoders have a timecode setting that will synchronize the primary and backup publish streams. Timecode synchronization is critical to allowing MMD Live to properly fail over during outages so your client endpoints can experience minimum disruption.
- Input and Output Resolution: be sure the resolution you set matches the resolution of the slot you are publishing to. If an HD slot receives an encoder stream that has an FHD resolution, that slot will reject the connection.
- Video Bitrate: be sure your video bitrate matches the expected bitrate of the slot you are publishing to. Too high a bitrate may result in your connection being rejected.
- Audio Bitrate: matching the audio bitrate setting to our specifications (see Bitrate Setup) will ensure a proper sounding output at your client endpoints.
- Frame Rate: matching the frame rate setting to our specifications (see below) will ensure a smooth video experience at your client endpoints.
- Keyframe Interval: set your keyframe interval to 5 seconds initially.

Multi-device Media Delivery - The Basic Steps

Use this section to help plan your implementation of MMD Live. These steps give you an overview with additional details provided in the following sections.

To implement MMD Live:

- 1. Determine your live video needs: broadcast time, regions, playback devices, and so on.
- 2. Contact your Limelight representative to order slots and receive your login credentials.
- 3. Log into Limelight Control portal. Choose Configure on the left navigation bar. From that expansion, choose MMD Live.
- 4. Walk through the steps to configure your MMD Live slots. You can only configure the number and type of slots which you have already purchased.
- 5. Once configured, you'll receive primary and backup ingest URL, playback URLs, encoder credentials and other information.
- 6. Set up your live stream RTMP encoder. For example, see Section 4 for instructions on encoding live media with the Adobe Flash Media Live Encoder (FMLE).
- 7. Begin recording live media and start your encoder.
- 8. View your live stream on the playback URLs.

Note: Legacy Flash Live livestreams may occasionally exhibit delays in starting stream playback. Reloading the page resolves this delay.

Inputs and Outputs

MMD Live receives incoming live streams from your encoder and either transcodes or transmuxes them into up to five video formats and one audio-only stream. (Please note that audio-only is produced exclusively for HLS). Once you complete your slot setup, you will receive playback URLs for different formats. MMD Live supports HTTP, HLS, HDS, MSS RTMP and RTSP. You can place these playback URLs in your endpoints and MMD Live will live stream and provide Adaptive Bitrate Streaming (ABS) with the following resolutions and bitrates, depending on the output format and whether your slot is transcode or transmux.

Transmux Slots

A transmux slot allows you to input up to 8 bitrates per live stream and receive five formats out at those same bitrates. The maximum throughput of all 8 bitrates combined must not exceed 16 Mbps. Your encoder will send these bitrates into your slot and MMD Live will transmux them into multiple playback formats. The output bitrates will be the same as your input bitrates for each playback format. Your endpoints will be able to use the ABS feature of MMD Live to switch among the bitrates to optimize the end user experience for HLS, HDS and MSS. You can set up your bitrates through the Control portal.

Transcode Slots

A transcode slot allows you to input a single RTMP stream in and receive five formats at multiple bitrates out. MMD Live accepts 576p (SD), 720p (HD) and 1080p (FHD) input streams and transcodes them into the output streams listed below. Please note that the audio-only stream is exclusively available for HLS output. You can set up your slots through the Control portal.

576p (SD) Slot Input Requirements: 1024x576_1800 kbps video, 128 kbps audio, 30 fps

Outputs:

| Video Stream | Audio Stream | Stream Name |
|--------------------|------------------------|------------------------------------|
| 1024x576_1800 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1800</pre> |
| 848x480_1000 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1000</pre> |
| 640x360_668 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_668</pre> |
| 320x180_268 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_268</pre> |
| 320x180_110 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_110</pre> |
| None (audio only) | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_a</pre> |

720p (HD) Slot Input Requirements: 1280x720_2400 kbps video, 192 kbps audio, 30 fps

Outputs:

| Video Stream | Audio Stream | Stream Name |
|--------------------|------------------------|------------------------------------|
| 1280x720_2400 kbps | LLNW 1 AAC-LC 192 kbps | <pre>\$sourceStreamName_2400</pre> |
| 1024x576_1800 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1800</pre> |
| 848x480_1000 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1000</pre> |
| 640x360_668 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_668</pre> |
| 320x180_268 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_268</pre> |
| None (audio only) | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_a</pre> |

1080p (FHD) Slot Input Requirements: 1920x1080_4000 kbps video, 192 kbps audio, 30 fps

Outputs:

| Video Stream | Audio Stream | Stream Name |
|---------------------|------------------------|------------------------------------|
| 1920x1080_4000 kbps | LLNW 1 AAC-LC 192 kbps | <pre>\$sourceStreamName_4000</pre> |
| 1280x720_2400 kbps | LLNW 1 AAC-LC 192 kbps | <pre>\$sourceStreamName_2400</pre> |
| 1024x576_1800 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1800</pre> |
| 848x480_1000 kbps | LLNW 1 AAC-LC 128 kbps | <pre>\$sourceStreamName_1000</pre> |
| 640x360_668 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_668</pre> |
| 320x180_268 kbps | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_268</pre> |
| None (audio only) | LLNW 1 AAC-LC 64 kbps | <pre>\$sourceStreamName_a</pre> |

RTSP Out

MMD Live supports delivery of RTSP as an output format. If you want to have RTSP out for your MMD Live slot, please contact your Limelight Account Manager for more information.

If you choose to have MMD Live deliver RTSP, your client application must call for a unique bitrate by appending the bitrate you want to the end of the RTSP URL in the form of "_<bitrate in kpbs>". For example, if you configure your slot to deliver a 1000 kbps rendition of your live stream, you would append "_1000" to the end of your RTSP URL to access that rendition.

If you do not append a bitrate to the end of your RTSP URL, MMD Live will interpret that to mean you want to access the default output of 268 kbps. Note that the default RTSP output requires a 268k rendition to be part of your output slot configuration stream in MMD Live. If the 268 kbps rendition is not part of your slot configuration, the default RTSP output will not work.

RTMP Out

If you want to have RTMP out for your MMD Live slot, please contact your Limelight Account Manager for more information.

Closed Captions

MMD Live supports closed captions on some streamed outputs. If you embed closed captions in your stream, viewers are able to see these captions in their RTMP, HLS and HDS outputs. Closed caption support is not available in MSS.

The input is required to be in CEA 608 format and the outputs are:

| Output | Closed Caption Format |
|--------|------------------------------|
| HDS | OnTextData |
| HLS | WebVTT |
| RTMP | OnTextData |

For instructions on using captions, see the <u>Closed Captioning Guide.</u>

Configuration UI

You will access Limelight's Control Portal to view and configure the slots you have purchased. You can create, copy and delete your slot configurations.

Main Configuration Page

After logging into Control, click the "MMD Live" link on the left hand navigation column to navigate to the main configuration page. Below is a screenshot of the page.

The live slots configured for your specific shortname are listed. At the top of this page, you can view the slot information that you have purchased.



<u>Buttons</u>

- New: Configures one of your purchased live slots.
- **Copy**: Makes a copy of an existing live slot configuration. The copy cannot have the same name as the original. Each slot must have a unique name.
- Delete: Allows you to delete a live slot configuration. You will receive a confirmation box before the delete is executed. CAUTION: Once a configuration is deleted, it cannot be restored.
- View: Lets you view a specific live slot in detail.
- Refresh: Refreshes the live slot data table with the most recent information.

Navigation and Organization

- Click on a specific slot to view key information about the URLs below the table.
- Double click on a specific slot to view the slot in detail.
- This is a multicolumn table and the columns can be configured and sorted. The default sort is by create date.
- Multi-select delete is not supported.
- User custom column does not persist.

Configuring a Slot

Configuring a slot is a simple three step process.

Step 1 - New Slot Creation

| Limelight Control | | Lime | light Video Platform / mmdprod005 - | Welcome Vitaliy Bondar - |
|--|--|--------------|-------------------------------------|--------------------------|
| 🐔 🗲 Configure | 😤 Manage | 🖹 Report 🔷 🐣 | Super Admin | Help |
| Configure Delivery Chunked Streaming Performance Performance FEA Stream Anywhere Live Streaming DNS Services Media Vault Geo Compliance MMD Live | Manage Step 1 Step 2 Step 3 Stot Barates Review Stot Details *Name 'Name sportsslot Description Slot for the Sports Channel Keywords, comma separated Ingest Details | Report 📤 | Super Admin | ● Help |
| | Choose Ingest Location/Region North-America ¢ Choose Primary POP Choose autom ¢ Choose Backup POP Choose autom ¢ | | | |
| | Choose Stream Type Transmux * Transcode | | | |
| | MediaVault © Enable MediaVault content protections © URL-based * Cookie-based *Shared Secret Show * *Confirm Shared Secret | | | |
| | Cancel Next | | | |

Slot Details

- **Name**: Name your slot to identify it. A unique slot name is required no two slots may have the same name. Only alphanumeric values are accepted as slot names (spaces are not allowed).
- Description: An optional freeform field for you to use to describe your slot.
- **Keywords**: Add optional keyword tags to your slot configuration to tag it. (A search feature may be added in the future.)

Ingest Details

- Location/Region: Select the region in which you want to ingest into your slot. Select a region where your encoder is located or the region closest to the physical location of your encoder.
- **Primary and Backup POPs**: Once you select a region, the available POPs are listed in these drop downs. Select the Primary that is closest to the physical location of your encoder to minimize data transmission time. Your Backup selection must be different from your Primary in order to provide you redundancy for your live stream in case there is a problem streaming to the Primary.
- Slot Type: Select the type of slot you want to configure. This selection must match the types and numbers of slots you have purchased.

MediaVault Selection

If you have purchased the MediaVault service option, this selection will be activated. Choose the type of MediaVault you would like to implement on this slot: either URL or Cookie based. You will be allowed to set your own secret key. You can find more information in the MediaVault User Guide located in the Control Portal.

Note: Enabling MediaVault will cause the Integrated Player Embed Code to not function.

Step 2 - Bitrate Setup

In Step 2, you will set up the bitrates you want to output from this slot. The bitrate selection is different depending on whether the slot is a transcode or transmux.

| Limelight Control | Lin | nelight Video Platform / mmdprod005 - | Welcome Vitaliy Bondar - |
|-------------------|---|---------------------------------------|--------------------------|
| r Configure | 🚰 Manage 📄 Report | 🐣 Super Admin | Help |
| | Step1 Step2 Step3 | | |
| Delivery | | | |
| Chunked Streaming | | | |
| Performance | Available | | |
| Performance FEA | Number of 1080n slots: 49 | | |
| Stream Anywhere | Number of 720p slots: 50 Number of 576p slots: 50 | | |
| Live Streaming | | | |
| DNS Services | Transcode | | |
| Media Vault | | | |
| Geo Compliance | Slot Type FHD 1080p HD 720p SD 576p | | |
| MMD Live | Output format ✓ 1920x1080: 4000 Kbps Video + 192 Kbps Audio ✓ 1280x720: 2400 Kbps Video + 192 Kbps Audio ✓ 1024x576: 1800 Kbps Video + 128 Kbps Audio ✓ 848x480: 1000 Kbps Video + 128 Kbps Audio ✓ 640x360: 668 Kbps Video + 64 Kbps Audio ✓ 640x360: 668 Kbps Video + 64 Kbps Audio ✓ 0x0: 0 Kbps Video + 64 Kbps Audio | | |
| | Cancel Back Next | | |

Bitrate Setup - Transcode Page

- Slot Type: Select the desired slot type. You may only choose a slot type if you have purchased enough of that type. The "Available" display shows how many of each type you still have left to configure. If 0 slots are available, you cannot create that specific slot type.
- Output Format: Select the bitrates you want to output from this slot. Default is that none of them are selected but you must choose at least one to proceed.

Bitrate Setup - Transmux Page

Bitrate configuration for transmux slots is highly customizable.

You may configure up to eight unique bitrates for your slot. A suggested set of video and audio bitrates are available in the drop down boxes but you may also enter your own custom bitrates in those boxes.

Simply create your bitrates and then check the entries you would like to have output.

| Limelight Control | | | | Limelight Video Platform / mmdprod005 | Welcome Vitaliy Bondar |
|-------------------|------------------------------|----------------------|--------------|---------------------------------------|------------------------|
| r Configure | 😤 Manage | Report | | 🐣 Super Admin | 1 Help |
| | Step 1 Step 2 Step 3 | | | | |
| Delivery | | | | | |
| Chunked Streaming | | | | | |
| Performance | Transmux ONLY | | | | |
| Performance FEA | | Video Bitrate (kbps) | Audio Bitrat | e (kbps) | |
| Stream Anywhere | ✓ sportsslot_3500 | 3500 | 192 | × | |
| Live Streaming | sportsslot_1800 | 1800 | 128 | v | |
| DNS Services | 🗟 enorteslot 1900 | 1000 | 100 | | |
| Media Vault | Sportssiot_1200 | 1200 | 128 | <u>×</u> | |
| Geo Compliance | ✓ sportsslot_950 | 950 | 128 | v | |
| MMD Live | sportsslot_668 | 668 | 64 | × | |
| | ✓ sportsslot_500 | 500 | 64 | × | |
| | sportsslot_268 | 268 | 64 | × | |
| | sportsslot_0 | 0 | 192 | × | |
| | Total Selected Bitrate: 8782 | kbps / 16 Mbps | | | |
| | Cancel Back Next | | | | |

- No two bitrates may be the same.
- At least one bitrate must be selected.
- The total of all selected bitrates cannot be greater than 16 Mbps. For your convenience, the total of all selected bitrates is calculated for you at the bottom of the table.
- You can choose from the drop down or a custom value can be entered.
- If there are 0 transmux slots available, you will not be allowed to create that slot type.
- All configured bitrates MUST be published to MMD Live for the slot to function correctly.

Step 3 - Bitrate Review Page

Once you have set up your bitrates, you will receive a review page. Check all of the information you entered before hitting the submit button.

| Limelight Control | | | Limelight Video Platform / mmdprod005 | Welcome Vitaliy Bondar - |
|-------------------|--|--------|---------------------------------------|------------------------------|
| r Configure | 🎦 Manage | Report | Augument Admin | Help |
| | Step 1 Step 2 Step 3 Slot Setup Bitrates Setup Review | | | |
| Delivery | | | | |
| Chunked Streaming | | | | |
| Performance | Slot Details Edit | | | |
| Performance FEA | | | | |
| Stream Anywhere | Name: sportsslot Description: | | | |
| Live Streaming | Slot for the Sports Channel Keywords, comma separated: | | | |
| DNS Services | Choose Ingest Location/Region: north-america | | | |
| Media Vault | Choose Backup POP: auto-selected Choose Backup POP: auto-selected | | | |
| Geo Compliance | | | | |
| MMD Live | Bitrates Edit Encoding Profile: Transmux 1. 3500 Kbps Video + 192 Kbps Audio 2. 1800 Kbps Video + 128 Kbps Audio 3. 1200 Kbps Video + 128 Kbps Audio 4. 950 Kbps Video + 54 Kbps Audio 5. 500 Kbps Video + 64 Kbps Audio | | | |
| | MediaVault Edit MediaVault: Enabled Cookie-based: Enabled Shared Secret: *****lio | | | |
| | Cancel Back Submit | | | You are currently in Control |

You can return to the previous setups by either clicking the back button or by clicking on the tab or edit button provided for each of the headings.

When you click the submit button:

- You go back to the main configuration page. Double click on the new slot to view all the details of the configuration, including the encoder settings, the playback URLs and more.
- You receive a notification at the top saying "Slot Saved".

| Limelight Con | trol | | Limelight Vide | o Platform / mmc | lprod005 🔻 🕔 | Velcome Vitaliy Bonda |
|-------------------|--|--------------|-------------------|-------------------------|--------------------|---|
| r Configure | 😁 Manag | ge | Report | A Supe | er Admin | (i) Help |
| | Event saved. | | | | | |
| Delivery | MMD Live | | | | | |
| Chunked Streaming | | Total | Available | Used | | |
| Performance | Number of 1080p slots Number of 720p slots | 50 50 | 49 50 | 1 0 | | |
| Performance FEA | Number of 576p slots Number of transmux slots | 50 50 | 50 49 | 0 | | |
| Stream Anywhere | + New | Copy | T Delete | View | Bof | rash |
| Live Streaming | Name | Created Date | Encoding Profiles | Pagion | Statue | |
| DNS Services | sportsslot | 2016-04-28 | Transmux | north-america | LiveEventProvision | in and the second se |
| Media Vault | entertainmentslot | 2016-04-28 | Transcode_1080 | north-america | LiveEventProvision | ů |
| | test-prod-event-dont-dele | 2016-04-25 | Transcode_720 | north-america | Error | |
| Geo Compliance | CopyTest-c3 | 2016-04-18 | Transmux | north-america | Error | |
| MAD Line | CopyTest-c2 | 2016-04-18 | Transmux | north-america | Error | |
| MMD Live | | | | | | |

Slots - Copy, Delete and View

Follow these steps to manage your slots.

Copy a Slot

- 1. Click on the slot you want to copy and click the Copy button.
- 2. Follow the same three steps used when creating a slot. The values are pre-populated with the same information as the original slot except for the slot name. Since the name has to be unique, a string is appended to the end of the name, however you can change the name.
- 3. Click Submit and another new slot is created.

Delete a Slot

- 1. Select the slot you wish to delete.
- 2. A dialog will appear. The word 'DELETE' must be typed to assure that the delete function wasn't chosen in error.

| Limelight Control Limelight Video Platform / mmdprod005 - Welcome Vitaliy Bondar - | | | | | | ar 🔻 | |
|--|--|--------------|--|-----------------|---------------------|--------------------------|--|
| 😤 🎤 Configure | e 😁 Manag | е | Report | 🐣 Supe | r Admin | Help | |
| | MMD Live | | | | | | |
| Delivery | Number of 1080p slots | Total 50 | Available U 49 | lsed 1 | | | |
| Chunked Streaming | Number of 720p slots Number of 576p slots | 50 50 | 50 50 | 0 | | | |
| Performance | Number of transmux slots | 50 | 49 | 1 | | | |
| Performance FEA | + New | 🖉 Сору | 1 Delete | 🔍 View | Refres | h | |
| Stream Anywhere | Name | Created Date | Encoding Profiles | Region | Status | | |
| Live Streaming | sportsslot | 2016-04-28 | Transmux | north-america | LiveEventProvisioni | | |
| DNS Services | entertainmentslot | 2016-04-28 | Transcode_1080 | north-america | LiveEventProvisioni | | |
| DING GELVICES | test-prod-event-dont-delete | 2016-04-25 | Transcode_720 | north-america | Error | | |
| Media Vault | CopyTest-c2 | 2016-04-18 | Transmux | north-america | Error | | |
| Geo Compliance | CopyTest | 2016-04-18 | Transmux | north-america | Error | | |
| MMD Live | | | Please confirm the | delete request. | × | | |
| | | | To permanently dele CopyTest-c3, type * DELETE | Delete Can | ord, | | |
| | | | | | | | |

View Slot Details

- 1. Select the slot and click the View button to see that slot's details. You will see the Publish URLs and Stream Name to enter into your encoder and you'll see the Playback URLs to use in your player.
- 2. If you choose to, you may use the Limelight SmartEmbed Player found in the section labeled "Embed Code Information." Choose your options and player type, copy the embed code and place it on your website. This embed code will play your live stream. For more information about the SmartEmbed, visit the Player Embedding Guide. NOTE: Enabling MediaVault will cause the Integrated Player Embed Code to not function.
- 3. When you see the Copy (double-window) icon next to a field, that means you can easily copy that field into the clipboard. Click the Copy icon to copy the field to the clipboard. You'll receive confirmation that the data has been copied.

Publish URL:

bak: 💷 rtmp://soundartestdemo.backup.bak.lldns.net/backup

Slot Details

| Name: test-prod-event-don Description: entertainmentslot Keywords, comma separa | t-delete ted: | | |
|---|--|--|--|
| Choose Ingest Location/R Choose Primary POP: phx Choose Backup POP: iad | legion: north-america | | |
| Encoder Information: Username: mmdprod005 Password: Password is as | provided in email. | | |
| Stream Name (to enter inte | o encoder): @ 2cc9fc763b3f434c98d5cf04ca0646ae | | |
| Publish URLs: | | | |
| Primary: 🗖 | rtmp://tentertainmentslot.mmdprod005.pri.lldns.net/mmdprod005 | | |
| Backup: 💷 | rtmp://entertainmentslot.mmdprod005.bak.lldns.net/mmdprod005 | | |
| Playback URLs: | | | |
| HDS: 🖻 | http://mmdprod005.mmdlive.lldns.net/mmdpc763b3f434c98d5cf04ca0646ae/manifest.f4m | | |
| HLS: 💷 | http://mmdprod005.mmdlive.lldns.net/mmdp763b3f434c98d5cf04ca0646ae/manifest.m3u8 | | |
| Smooth Streaming: 🕫 | http://mmdprod005.mmdlive.lldns.net/mmdpcc9fc763b3f434c98d5cf04ca0646ae/Manifest | | |
| Embed Code Information: Website Blog Link Select a player: Widescreen Player (span class=LimelightEmbeddedPlayer) (script src="//video.limelight.com/player-staging/embed.js"> close tag (script src="/video.limelight.com/player-staging/embed.js"> close tag close tag close tag close tag </td | | | |
| <pre><object class="LimelightEmbeddedPlayerFlash" data="//video.limelight.com/player/loader.swf? redirectUrl=//video.limelight.com/player-staging/current.swf" height="321" id="limelight_player_816128" name="limelight_player_816128" type="application/x-shockwave-flash" width="480"> <pre>cparam name="movie" value="//video.limelight.com/player/loader.swf?redirectUrl=//video.limelight.com/player-staging/current.swf" /> <pre>cparam name="movie" value="//video.limelight.com/player/loader.swf?redirectUrl=//video.limelight.com/player-staging/current.swf" /> <pre>cparam name="movie" value="window" /> <pre>coaram name="allowScriptAccess" value="alwavs" /></pre></pre></pre></pre></object></pre> | | | |

Bitrates

Encoding Profile: Transcode_720

- 1. 1280x720: 2400 Kbps Video + 192 Kbps Audio
- 2. 1024x576: 1800 Kbps Video + 128 Kbps Audio
- 3. 848x480: 1000 Kbps Video + 128 Kbps Audio
- 4. 640x360: 668 Kbps Video + 64 Kbps Audio
- 5. 320x180: 268 Kbps Video + 64 Kbps Audio
- 6. 0x0: 0 Kbps Video + 64 Kbps Audio

MediaVault

MediaVault: Disabled

Using Your Slot

Once your slot is configured, you can begin streaming to it right away. That slot will always be available to you whenever you want to use it.

Start by setting up your encoder with the information provided in the "View Slot" screen. An example set up using the Flash Media Live Encoder software is provided below. Be sure to use the specifications of your slot type when setting up your encoder. It's also important to publish to both Primary and Backup publishing URLs, and use absolute Timecode in your encoder, to provide maximum failover protection for your live stream.

Once you are streaming, use one of the playback URLs shown in the "View Slot" screen in your own video player or app. Or you can use the Limelight Smart Embed on your website or blog, which will load a player that contains your playback URL automatically.

Setting Up Your Encoder

Sample Set Up Using Adobe Flash Media Live Encoder

Adobe Flash Media Live Encoder (FMLE) is a free encoding solution that can be downloaded from Adobe. In this section, we use FMLE as an example to show you how to configure a live stream. Although we reference this encoder specifically, other encoders use a similar workflow.

It's important to note that after installing FMLE, you need to download and install the Limelight Access Adaptor for proper authentication with the MMD Live ingest server:

- Adaptor for FMLE 3.2 (Download for Windows) (Download for Mac)
- Adaptor for FMLE 3.1 (Download for Windows) (Download for Mac)
- 1. Connect your video and audio inputs to your encoder.
- 2. Declare your video settings by setting the format to H.264, the frame rate to 30 fps, and the input and output size and bitrate to match your slot type. Be sure to check the "Timecode" box to synchronize your primary and backup streams for the best failover protection. Keep in mind the following rules when declaring streams:
 - To ensure quality, declare settings that meet the input specification for the type of slot you are publishing to.
 - Make sure you have enough upload bandwidth at your encoder to support your bitrates. Bitrates that are too high may cause buffering. To figure out how much upload bandwidth you need, add your video bitrate and audio bitrate and multiply by 2 for primary and backup.
 - Enabling "Timecode" on your encoder will set an absolute time code on the streams you send to MMD Live. This will keep your primary and backup streams to be synced so that if publishing to the primary ingest server fails, the backup stream will be able to keep your live stream available to end users.
 - If your encoder allows separate configuration of keyframe interval and chunk length, set the keyframe interval to 5 seconds and set the chunk length to 10 seconds.



Performance Note Your input stream bitrate and resolution must match your slot configuration set up within the Control UI in order for your service to work correctly. MMD Live will monitor your input stream to ensure it matches your slot configuration settings. If your input stream has a higher resolution (shown as "Output Size" in the example above) than your slot configuration, or if your bitrate exceeds 2x your configured setting for over 10 seconds, your input stream will be temporarily disconnected for up to ten seconds to provide time for your encoder settings to return to your configured values. When your input stream returns to your slot configuration settings, the stream will be allowed to reconnect.

3. Declare your audio settings. Use AAC format as shown below.

| 🗹 Audio | |
|--------------|---------------------|
| Device: | Internal Microphone |
| Format: | AAC 🔻 |
| Channels: | Stereo 🔻 |
| Sample Rate: | 44100 v Hz |
| Bit Rate: | 192 TKbps |

4. Connect to the MMD Live ingest server by pasting the 'Primary Publish URL', 'Backup Publish URL' and 'Stream Name' from the slot configuration within the Control UI. Including a backup publish URL is required to insure smooth playback in the event of network connectivity issues, planned and unplanned maintenance, etc.

| Stream to Flash Media Server | | | |
|------------------------------|--|--|--|
| FMS URL: | rtmp://mystream.mmd05.pri.lldns.net/mm | | |
| Backup URL: | rtmp://mystream.mmd05.bak.lldns.net/mn | | |
| Stream: | 4ee20ae3e2a64de1814a99861c316d4 | | |

- 5. Hit Connect To and use the Username and Password you received from your Limelight representative to complete the connection.
- 6. Then hit 'Start' to begin sending your stream to the entry point. Embedded players on your site will then begin to show the live stream.

Note: It's important to ensure your Primary and Backup streams are time synced using absolute timecodes to avoid disrupting the end-viewer experience when the stream switches to the Backup <u>Ingest</u>.

Live Reporting

Your MMD Live account comes with reporting on your slot activity. To access reporting, log into your Control account, click the "Report" tab at the top of the page, and then click the "Historic Live Event Overview" link on the left navigation pane.

This report shows a variety of metrics for historical (not real time) HLS, HDS and MSS streams, and can be used to analyze slot popularity and audience behavior.

Report data is shown for the selected services (HLS, HDS and/or MSS) and the specified date range and time zone.

The report includes a Views table for "most popular slots", an Events table that provides detailed information for each slot, including Event Date, Total Views, and a link to a Historic Live Event Detail page.

For this version of Historical Live Event Overview reporting, the Duration metrics are not enabled. Look for this feature in a future release of MMD Live.

The report also includes a Most Popular horizontal bar chart, a Bitrate Distribution vertical bar chart, a User Agents pie chart, an interactive map (similar to the Geography Report) that displays aggregate audience size by geographic area, and a Live Event Geo Summary data table that shows audience distribution by major geographic area.

Data may take up to six hours to update.

Sample Historic Live Event (part 1)

Historic Live Event Overview



USER AGENTS 0

Sample Historic Live Event (part 2)



| Live Event Geo Summary | | | | |
|------------------------|------------------------------|------------------|--|--|
| Name | Number of Views 🖨 | % of Total Views | | |
| North America | 2121113 | 99.02 | | |
| Europe | 12880 | 0.6 | | |
| Asia | 5968 | 0.28 | | |
| South America | 1395 | 0.07 | | |
| Oceania | 546 | 0.03 | | |
| Africa | 299 | 0.01 | | |
| | 14 ** Page 1 of 1 +> +1 10 0 | View 1 - 6 of 6 | | |