



Streaming Live Video to Rev Webcasts Using Vbrick Devices

Quick Setup Guide

Includes Instructions for the Vbrick DME and Vbrick Encoder



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Founded in 1998, Vbrick Systems is a privately held company that has enjoyed rapid growth by helping our customers successfully introduce mission critical video applications across their enterprise networks. Since our founding, Vbrick has been setting the standard for quality, performance and innovation in the delivery of live and stored video over IP networks—LANs, WANs and the Internet. With thousands of video appliances installed world-wide, Vbrick is the recognized leader in reliable, high-performance, easy-to-use networked video solutions.

Vbrick is an active participant in the development of industry standards and continues to play an influential role in the Internet Streaming Media Alliance (ISMA), the MPEG Industry Forum, and Internet2. In 1998 Vbrick invented and shipped the world's first MPEG Video Network Appliance designed to provide affordable DVD-quality video across the network. Since then, Vbrick's video solutions have grown to include Video on Demand, Management, Security and Access Control, Scheduling, and Rich Media Integration. Vbrick solutions are successfully supporting a broad variety of applications including distance learning and training, conferencing and remote office communications, security, process monitoring, traffic monitoring, business and news feeds to the desktop, webcasting, corporate communications, collaboration, command and control, and telemedicine. Vbrick serves customers in education, government, healthcare, and financial services markets among others. Vbrick products are manufactured in an ISO certified manufacturing facility.

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Streaming Live Video to Rev Webcasts Using Vbrick Devices

This document provides the details and setup steps needed to stream and record live video to a Rev Webcast using Vbrick devices. This document *only* covers Vbrick specific devices including the Vbrick Encoder and Distributed Media Engine (DME). Third party devices are not covered. However, adding Akamai HLS streams to a DME will also be covered.

Further, this guide details using the Vbrick Encoder as the video *source* and the Distributed Media Engine (DME) as the *destination* for live streaming video. Other variations may be used with Vbrick devices but this configuration is most commonly used for streaming live video to Vbrick Rev for Webcast Events.

Tip: This document is using the vbrick encoder as the video source and the Distributed Media Engine (DME) as the destination for live streaming video. Other variations may be used with Vbrick devices but this configuration is most commonly used for streaming live video to Vbrick Rev for Webcast Events.

Required Access and Product Versions

You should have System Administrator access to the following Vbrick products and versions:

- Vbrick Rev 7.6 or later
- Vbrick Encoder 4.3 or later
- DME 3.7.1 or later (Note: v3.17 or later is required for Akamai HLS streams)

Overview - Live Streaming a Webcast Event in Rev

There are certain steps that need to be followed when you are preparing to live stream a Webcast Event in Vbrick Rev. You will need administrator access to each device as noted below.

- ▼ To prepare to live stream video for a Rev Webcast Event, you will need to:
 1. Configure a Vbrick Encoder and link it to Vbrick Rev. You will need system administrator access to an encoder.
 2. Link a DME to Vbrick Rev. You will need system administrator access to a DME.
 3. Set up the Encoder and the DME as a device in Vbrick Rev. You will need system administrator access to Vbrick Rev.
 4. Create a Presentation Profile in Vbrick Rev that uses the Encoder device and the DME device. You will need system administrator access to Vbrick Rev.
 5. Create your Webcast Event using the Presentation Profile. You will need system administrator or event administrator access to Vbrick Rev.
 6. Host your Webcast Event and stream live video.

Configure a Vbrick Encoder to Live Stream Video

Before you can live stream video to a Rev Webcast event, you must configure an encoder. This setup will be using an encoder as a video source for Rev.

▼ To configure the vbrick encoder:

1. Log in to a vbrick encoder as a system administrator.
2. Complete each of the steps described below as needed.

Set a Video Source on the Encoder

Begin by setting a video source on the encoder. You will select how your device is connected, its input, and other relevant attributes. This will include setting a video template and video rate settings as well.

▼ To access the Video fields:

1. Navigate to **Encoder Configuration > Video** (labeled **Video Input** on some models).

The vbrick encoder supports the **Baseline**, **Main**, and **High** profiles and provides superior performance under a wide variety of network and application environments. H.264 video compression will typically provide the same quality as MPEG-2 at half of the bit rate or less, especially in high bit rate and high resolution environments. For more information about 9000 Series encoders and decoders, go to the www.Vbrick.com/products page on the Vbrick website.

When making configuration changes, the slot shown in bold (see Figure 1 below) is the currently selected slot, an asterisk (*) next to the Slot/Channel header near the top of the page indicates there are pending changes to the configuration which have not yet been “applied,” and a red exclamation point indicates a configuration error in that slot.

The screenshot displays the 'Encoder Configuration --> Video' web interface. At the top, there are four tabs for selecting the input: 'Slot 1/Channel 1*' (bolded and marked with an asterisk), 'Slot 1/Channel 2', 'Slot 2/Channel 1', and 'Slot 2/Channel 2'. Below the tabs, the 'How is Video Connected?' dropdown is set to 'HDMI'. The 'Video Input Enable' checkbox is checked and labeled 'Enabled'. The 'Video Input Name' field contains 'Slot 1/Channel 1'. The 'Video Format Auto-Detect' checkbox is checked and labeled 'Enabled', with a note 'Detected Format: 720p/60 16:9'. The 'Closed Caption' dropdown is set to 'Disabled'. The 'KLV' dropdown is set to 'Network LDS Passthrough'. The 'KLV PTS' dropdown is set to 'Capture Time'. The 'KLV Multicast Source' checkbox is checked and labeled 'Enabled'. The 'KLV IP Address' field contains '0.0.0.0'. The 'KLV Port' field contains '7777'. There is a 'Hide advanced settings' link. Below this, there is an 'Insert Metadata String' field with an 'Insert' button. The 'Color Space' dropdown is set to 'Auto'. The 'Brightness (0~100)' field contains '50'. The 'Contrast (0~100)' field contains '50'. The 'Saturation (0~127)' field contains '64'. The 'Tint (-50~50 degrees)' field contains '0'.

Figure 1. Video Configuration: Part 1 – Video Input

Keep in mind that any currently active streams will be momentarily disrupted every time you click **Apply**. To avoid intermittent disruptions on units with multiple slots and channels, wait until you have configured changes on all slots and channels, and then click **Apply**. This behavior only applies to the **Encoder Configuration > Video** and **Audio** pages. On all other pages you must click **Apply** before you exit the page.



Figure 2. Quad Channel Encoder (no SDI)



Figure 3. Dual Channel Encoder (with SDI)

Tip: The fields described below relate to using Vbrick devices with Rev specifically. As a result, not all available fields are covered in their entirety here. For a full description of encoder device setup, view the vbrick encoder Online help.

Field	Description
Choose Video Input	<p>Choose the video input to configure. Your encoder may be configured with one slot or two slots, with one or two channels in each slot. Figure 3 shows an encoder with two slots (and four channels). As shown in the graphic (at the right side on back of unit) Slot 1 is physically on the right; Slot 2 is on the left.</p> <ul style="list-style-type: none"> • Slot1/Channel 1 • Slot1/Channel 2 • Slot2/Channel 1 • Slot2/Channel 2

Field	Description
How is Video connected?	<p>Figure 3 shows the High Definition video input connectors on the rear panel. The A/V connector on the unit is used with the Vbrick-supplied "breakout" cable which has both Composite and Component video inputs. Select the option from the dropdown that matches your video input.</p> <ul style="list-style-type: none"> • Composite – one connector (labeled COMP IN) on breakout cable. Use the Micro DB-15 connector (located between the two HDMI ports). • Component – three connectors (labeled Y, Pb, Pr) on breakout cable. Use the Micro DB-15 connector (located between the two HDMI ports). • HDMI – High Definition Multimedia Interface that transmits uncompressed digital data. • SDI – supports both SD-SDI typically used for broadcast-grade video (meets SMPTE 259M) or HD/3G-SDI which processes 1080p at bit rates of 2.97 Gbits/sec (meets SMPTE 424M). • VGA – supports most of the common analog output videos from a PC or laptop.
Video Input Enable	Use to Enable Disable the selected Video Input. All video inputs are enabled by default.
Video Input Name	Used to provide a meaningful name to the video input source such as "Camera 1" or "Rear Camera". The default value of the field is useful to understand the physical connection while renaming the field will convey what video source will be visible.
Video Format Auto Detect	Used to auto detect the format being used. If a supported format is in use, video format and aspect ratio will be auto-detected and used. The drop-down menus for those values will not appear as a result.
Video Format	<p>This field is displayed if Video Format Auto Detect is not enabled and is used to configure the Video Format on the encoder so that it exactly matches the video source connected to the encoder. As an aid, the encoder can sense the input format and report it in the Detected Video Format read-only field. The options for Video Format shown below vary depending on how the input video is connected.</p> <ul style="list-style-type: none"> • Composite – NTSC. PAL. • Component – 1080p/60/30, 1080i/60/50, 720p/60/50, 576p/i, 480p/i, 1400x1050/60, 1280x1024/60, 1366x768/60, 1360x768/60, 1280x768/60, 1024x768/60, 800x600/60 • HDMI – 1080p/60/50/30, 1080i/60/50, 720p/60/50, 576p/i, 480p/i, 1280x1024, 1024x768, 800x600, 640x480 • SD-SDI – 576i, 480i • HD/3G-SDI – 1080p/60/50/30, 1080i/60/50, 720p/60/50 • VGA - 1600x1200/60, 1680x1050/60, 1400x1050/60, 1280x1024/60, 1366x768/60, 1360x768/60, 1280x768/60, 1024x768/60, 800x600/60, 640x480/60

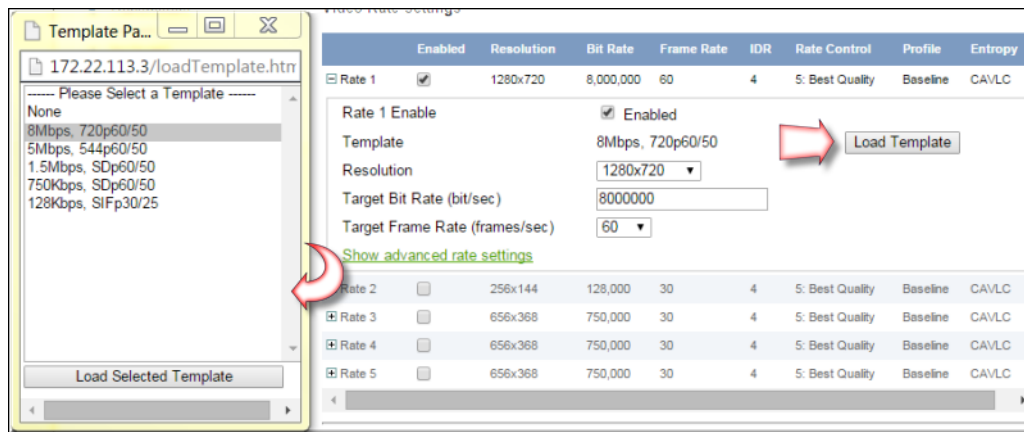
Field	Description
Video Aspect Ratio	Video Aspect Ratio is the ratio of the width of the image to the height of the image. High Definition video generally uses 16:9; Standard Definition uses 4:3. This field is not displayed and automatically detected if Video Format Auto Detect is enabled.
Detected Format	Shows the detected Video Format (see Figure 1) and Aspect Ratio that is actually connected.
Color Space	<p>(Advanced Setting) HDMI/Component. Override the default Color Space. Useful if connecting DVI from a PC over HDMI. The encoder autodetects and supports both YCrCb (commonly used by cameras or video players) and RGB (commonly used by computers) on the HDMI and Component inputs.</p> <ul style="list-style-type: none"> • Auto – Default. • RGB – represents the color space as red, green and blue. • YCrCb – represents the color space as luminance (Y) and color difference signals (R-Y) and (B-Y). <p>In most situations and with most video devices, the default setting to Auto detect the Color Space is recommended. However with some types of video equipment like DVI-to-HDMI convertors and general purpose image scalers, the encoder's automatic setting may not be able to choose correctly. If you see a pink or green tint on the encoded video there is a good chance the color space of your source and the encoder do not match.</p>
Brightness	(Advanced Setting) 0–100. Default = 50. Brightness is information about the varying light intensity of an image which is best described as brightness. It only affects the luminance (Y) component of the color space.
Contrast	(Advanced Setting) 0–100. Default = 50. The contrast is the range of light-to-dark values of an image that are proportional to the voltage differences between the black and white levels of the signal.
Saturation	(Advanced Setting) 0–127. Default = 64. Saturation is the spectral intensity of a color. It operates on the PbPr (CbCr) chroma components of the color space by increasing or decreasing both components by the same percentage.
Tint	(Advanced Setting) +50/-50 degrees. Default = 0. Tint (or Hue) is the attribute by which a color may be identified in the visible spectrum and refers to the chromaticity of the image. Adding or subtracting Tint changes the color (Hue) of the video. The numbers actually relate to the vector phase of the color spectrum in degrees of a total of ± 180 degrees.
Blackout Top	(Advanced Setting) 0–2. Default = 0. Available with 480i and 576i inputs only. Some video signals include additional information that results in undesirable artifacts on some sides of the video frame. This option blacks out an area near the top of player window—not a specific number of lines. Be sure to test your results when using this option.

Video Template Settings

▼ To access the **Load Template** button:

1. Navigate to **Encoder Configuration > Video** (labeled **Video Encode** on some models) > **Video Rate Settings** section.
2. Click the (+) expand icon to access additional fields and settings and advanced rate setting fields per setting. (You may need to click the **Edit** button first)
3. Click the **Load Template** button to load a template for a specific setting.

Use the **Load Template** button to populate the Video Template Settings with preconfigured video values (or select **None**). *The templates available when you click Load Template will vary depending on your encoder model (1, 2, or 4 channels).*



Choose a template based on motion and bandwidth. **750Kbps, SDp60/50** is the default template for a single or dual unit. Quad is **750Kbps, SDp30/25**. To read the following table, start in left column and read from left to right.

Table 1. Video Template Settings

Template Name	Profile	Resolution 16:9 (4:3)	Bit Rate	Frame Rate	IDR	Rate Control	Entropy
12Mbps,1080p60	Baseline	1920x1080	12M	60(50)	4	5	CAVLC
10Mbps,1080p60	Baseline	1920x1080	10M	60(50)	4	5	CAVLC
10Mbps,1080p30	Baseline	1920x1080	7M	30(25)	4	5	CAVLC
8Mbps,720p60	Baseline	1280x720	8M	60(50)	4	5	CAVLC
7Mbps,720p60	Baseline	1280x720	7M	60(50)	4	5	CAVLC
7Mbps,720p30	Baseline	1280x720	7M	30(25)	4	5	CAVLC
5Mbps,544p60	Baseline	960x544	5M	60(50)	4	5	CAVLC
4Mbps,544p60	Baseline	960x544	4M	60(50)	4	5	CAVLC
4Mbps,544p30	Baseline	960x544	4M	30(25)	4	5	CAVLC
1.5Mbps,SDp60	Baseline	656x368 (640x480)	1.5M	60(50)	4	5	CAVLC
1.5Mbps,SDp30	Baseline	656x368 (640x480)	1.5M	30(50)	4	5	CAVLC
750Kbps,SDp60	Baseline	656x368 (640x480)	750k	60(50)	4	5	CAVLC
750Kbps,SDp30	Baseline	656x368 (640x480)	750k	30(25)	4	5	CAVLC
128Kbps,SIFp60	Baseline	256x144 (192x144)	128k	60(50)	4	5	CAVLC
128Kbps,SIFp30	Baseline	256x144 (192x144)	128k	30(25)	4	5	CAVLC

Video Rate Settings

▼ To access the **Video Rate Settings** fields:

1. Navigate to **Encoder Configuration > Video** (labeled **Video Encode** on some models) > **Video Rate Settings** section.
2. Click the (+) expand icon to access additional fields and settings and advanced rate setting fields per setting. You may need to click the **Edit** button first.

The encoder supports multiple bit rate encoding (MBR). This means the encoder can encode one input stream at multiple bit rates that can be optimized and targeted for different devices. For example HD-TVs, PCs, and smartphones have different bandwidth requirements and will be associated with different streams. Each configured stream must be configured with a specific video and audio rate.

Note: There are five video rates available per input channel and a maximum of 16 video rates can be configured per unit. Be sure to review the MBR rules and constraints in the Vbrick Encoder Release Notes.

Enabled	Resolution	Bit Rate	Frame Rate	IDR	Rate Control	Profile	Entropy
<input checked="" type="checkbox"/>	256x144	128,000	30	4	5: Best Quality	Baseline	CAVLC
<input checked="" type="checkbox"/>	256x144	128,000	30	4	5: Best Quality	Baseline	CAVLC
<input checked="" type="checkbox"/>	256x144	128,000	30	4	5: Best Quality	Baseline	CAVLC
<input checked="" type="checkbox"/>	256x144	128,000	30	4	5: Best Quality	Baseline	CAVLC

Rate 1 Enable: Enabled
 Template: Custom Settings [Load Template]
 Resolution: 256x144
 Target Bit Rate (bit/sec): 128000
 Target Frame Rate (frames/sec): 50
[Hide advanced rate settings](#) [Copy to Other Rates]
 IDR Frame Interval (sec): 4
 Rate Control Setting: 5: Best Quality
 Profile: Baseline
 Entropy Coding: CAVLC

[Apply] [Revert] [Default] [Clone] [Save] [Finish Edit]

Field	Description
Rate & Enable	Rate 1 is enabled by default. At least one rate must always be configured.
Template	<p>This read-only field shows the template (if any) that is currently applied. The templates provide an optimized combination of settings that have been configured and tested at Vbrick. The templates available when you click Load Template will vary depending on your encoder model (1, 2, or 4 channels). See Table 1 on page 7 for a list of all templates and settings. If a template is applied it will display the template name (e.g. 750Kbps, SDp30/25) or Custom Settings (if you made changes after initially selecting a template). Select Load Template > None to clear a "Custom Settings" message. Select Copy to Other Rates to copy the "Advanced Rate Settings" only for the selected rate to all of the other rates on the same Slot and Channel.</p>

Field	Description
Resolution	<p>Sets the video encoding resolution (the width and height respectively) of the compressed video stream. The Vbrick encoder has high quality video up/downscaling built-in to let you choose from a wide range of standard encode resolutions regardless of the Video Format of your source video. For example, you can use a 1080p60 High Definition video input source and have the encoder downscale the video to a Standard Definition resolution so it can be streamed with good quality at bit rates to match your network or to match the processing power and display resolution of your decoders, STBs or PC players. When the aspect ratio of the encode resolution does not match the aspect ratio of the input, the encoder will letterbox. Available video resolutions include:</p> <p>1920x1080, 1680x1050, 1680x1008, 1600x1200, 1400x1050, 1366x768, 1360x768, 1344x1074, 1280x1024, 1280x768, 1280x720, 1120x700, 1024x768, 960x544, 832x666, 832x520, 832x500, 800x600, 720x576, 720x480, 656x410, 656x394, 656x368, 640x480, 512x288, 400x304, 384x288, 352x288, 352x240, 320x240, 256x144, 192x144, 176x128, 176x144, 128x96.</p>
Target Bit Rate (bits/sec)	<p>32,000–20,000,000 bits/sec. Constant bit rate. Default = 750,000. This number can only be changed in 1000 bits/sec increments. It represents how much data the encoder will send out each second to carry video to a player. The word target is used because the encoder can vary its bit rate slightly in response to the amount of detail in the movie or camera output. The more data the encoder sends in one second, the more clearly the details of the video will be seen on a player. It is not always desirable to send the most possible data, since that requires a large network "pipe" (connection). The trade-off is the level of detail in the video with the use of smaller network connections. The encoder tries to encode the video at a quality that will (on average) match the Target Bit Rate. <i>The larger the number, the better the quality but this can potentially limit the number of clients that can connect to the encoder.</i></p>

Field	Description
Target Frame Rate (frames/sec)	<p>The following options for Target Frame Rate vary depending on the Video Format selected above. There are specific Frame Rates associated with Standard Definition formats (NTSC or PAL) or with High Definition formats (all others). The default is based on the model: 60 (for single and dual channel models) or 30 (for quad channel models).</p> <ul style="list-style-type: none"> • NTSC – 60, 30, 24, 15, 10, 7.5, 6, 5, 3, 2 • PAL – 50, 25, 12.5, 5, 2.5 <p>Note: For Presenter Mode all of the above rates are allowed.</p> <p>This number represents how many frames the encoder will send out each second to carry the video to an H.264 player. The word target is used because the encoder can vary its frame rate slightly in response to the amount of motion in the movie or camera output. See the Rate Control Setting parameter below for more details. Frame rate is the number of "frames" the encoder sends in a second for an H.264 player to display. Moving pictures are made up of a rapid series of "still" pictures that move so fast that the "illusion" of motion is produced. A frame is one such "still" picture. Regular TV programs in the U.S. run at about 30 frames in a second, and the more frames presented in a second, the smoother the motion contained within the video will appear. Encoding and transmitting a frame requires the use of data, so that, when considering a particular bit rate, sending more frames demands that each frame contain fewer fine details.</p>
IDR Frame Interval (sec)	<p>0–30. Default = 4. Also called "key frame interval." The frequency in seconds at which IDR (Intra Dynamic Refresh) frames are inserted for Seek, Fast Forward and Rewind functionality. Higher values create fewer random access points and better compression efficiency. Lower values create more access points but with less compression efficiency. Zero means all frames are IDR frames. Vbrick recommends you do not set to zero because video quality is not generally acceptable and stream bandwidth may be excessive.</p>
Copy to Other Rates	<p>Click this button to copy the "advanced rate settings" (IDR Frame Interval, Rate Control Setting, Profile, and Entropy Coding) to all other configured rates.</p>

Field	Description
Rate Control Setting	1: Lowest Latency – 5: Best Quality. Default = 5. This parameter lets you trade off video quality versus the latency imposed by the encoder. A higher value provides better quality but more latency; a lower value provides less latency with a loss of quality. This parameter lets you trade-off video quality with how tightly rate control is imposed. A larger number increases the number of frames over which the target number of bits can be distributed. This means that the average bit rate, measured over small periods of time, can fluctuate more around the specified target bit rate. A smaller number will reduce the fluctuations around the target bit rate but will also reduce the ability of rate control to apply the bits to scenes which might be visually optimized by their application. In addition, when using the Custom transport mode (see Transport Stream Settings) and attempting to tune for lowest possible latency (minimal PTS-PCR Gap), it is useful to minimize the bit rate fluctuations by using a smaller value. <i>In bandwidth-restricted networks with little tolerance for bit rate fluctuations, or when tuning aggressively for minimum delay, a smaller value is recommended; otherwise, use a larger value or the default.</i>
Profile	The profile defines the subset of bit stream features in an H.264 stream, including color reproduction and video compression. <ul style="list-style-type: none"> Use a High profile for streaming to Rev.
Entropy Coding	Use CABAC for streaming to Rev.

Create an RTP Stream on the Encoder

Next, create an RTP Stream using the configured Encoder video source and rate.

▼ To access the Streams fields:

1. Navigate to **Encoder Configuration > Streams**.

A “stream” is a bundled group of resources that describes the characteristics of the output bit stream.

A Stream specifies:

- program
- transport type
- video rate
- audio rate

Encoder Configuration --> Streams

Choose Stream: Stream 1 -

Used By

Transmitters: None
Servers: Server 1
Archivers: None

Enable Stream: Enabled

Stream Name:

Transport Type: RTP

Select Video Rate: Video Rate 1

Select Audio Rate: Audio Rate 1

Estimated Bit Rate: 7,378,870

[Hide advanced settings](#)

Enable Closed Caption: Enabled

Metering: Enabled

Metering Aggressiveness: Medium

Encryption: Enabled

Encryption Key: Key 1 - Stream1Camera1Back

Field	Description
Choose Stream	Select a stream from those defined on the Encoder Configuration > Programs page.
Used By	Read-only. Shows which Transmitters, Servers, and Archivers (future) are configured to use this stream.
Enable Stream	Enable the selected stream.
Stream Name	Enter a user-friendly name for the selected stream.
Transport Type	Use RTP for streaming to a DME and Rev.
Select Video Rate	Select video rate (defined on Encoder Configuration > Video Input page) from dropdown list.
Select Audio Rate	Select audio rate (defined on Encoder Configuration > Audio Input page) from dropdown list.

Tip: The fields described below relate to using Vbrick devices with Rev specifically. As a result, not all available fields are covered in their entirety here. For a full description of encoder device setup, view the vbrick encoder Online help.

Create an Auto Unicast Transmitter

Transmitter settings should be modified slightly from the default settings that are discussed in the encoder's Online help when using the encoder as a video source for living streaming to Webcast events.

The Transmitter is set up as an auto unicast Transmitter and the DME you plan to use is specified in the Destination field, for example. The Rev recommended specific fields are defined below after you access and create the Transmitter as you normally would.

▼ To access the Transmitters fields:

1. Navigate to **Encoder Configuration > Transmitters**.

A **Transmitter** pushes the stream to a configured destination. When configuring a stream to transmit to Vbrick Rev for live streaming for a Webcast Event, the encoder is used as a video source and a DME is set as the destination. Use the fields below for Rev specific settings to accomplish this. Otherwise, the default values may be used as described in the Transmitters Online help topic in the Vbrick Encoder Admin help.

Encoder Configuration --> Transmitters

SDP File URL (click to play or save) <http://172.22.113.3/vbStream1T1.sdp>

Choose Transmitter Transmitter 1 - HQ Conferen... ▼

Enable Transmitter Enabled

Transmitter Name

Stream Select Stream 1 - ▼

Transport Type RTP

Destination IP Address ▼

Auto Unicast Mode Auto Unicast (UDP) ▼

Auto Unicast Dest Port

Auto Unicast Dest Pub Point Name

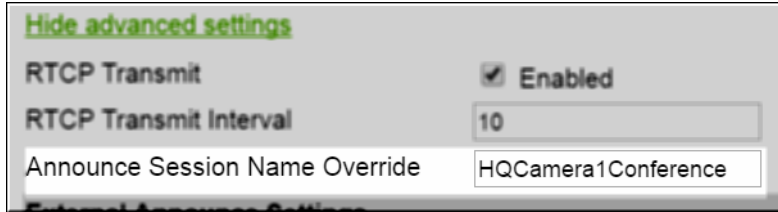
Auto Unicast Dest Username

Auto Unicast Dest Password

[Show advanced settings](#)

Setting	Description
Stream Select / Transport Type	Make sure the Stream Select / Transport Type setting is an RTP stream.
Destination	This should be the DME IP Address you plan to use as a Destination. Make sure that no http or https or slashes are used as well as no port. Only the IP address should be entered here.
Auto Unicast Mode	Auto Unicast mode must be enabled. Auto Unicast UDP is the recommended setting.
Auto Unicast Destination Port	This <i>must</i> be changed to 5544.

2. Click the **Show advanced settings** link.
3. Set your Stream Name in the **Announce Session Override** field. This will be the name used in the Rev Presentation Profile as a playback URL so try to use a descriptive name. A good rule of thumb is to use a name that matches the video source being used so that you remember where the video is coming from. Avoid special characters and spaces, including underscores.



Confirm Vbrick Encoder Configuration Settings

To confirm that you have set up the Encoder correctly, check the **Transmitters** status page to verify that the Transmitter is streaming to the DME that you specified in the **Destination** field.

- ▼ To access the Transmitters status page:
 1. Navigate to **Monitor > Encoder Status > Transmitters**.
 2. You should see the Transmitter you defined transferring **IP Packets** to the **Destination IP** Address you specified.
 3. Note also that the **Transport Type** is Auto Unicast (UDP) as recommended.

Monitor --> Encoder Status --> Transmitters							
Transmitters							
Transmitter	State	Destination	Video Port	Audio Port	Bytes Transferred	IP Packets Sent	Transport Type
Transmitter 1 - HQ Conference Transmit	Transmitting	172.22.113.4	48240	34900	1,220,080,597	983,827	Auto Unicast (UDP)

Link a Vbrick Encoder to Rev

The final step when configuring the Vbrick Encoder is making sure it is linked to Vbrick Rev.

Additional Information: This step requires the URL of your Vbrick Rev instance and an API Key created in Rev. You may need to come back to this step after you have created an API key.
See: "Create an API Key in Rev for Vbrick Devices"

▼ To access the Vbrick Rev Interface fields:

1. Navigate to **System Configuration > General > Vbrick Rev Interface** section.

Vbrick Rev Interface	
Vbrick Rev Interface Enable	<input checked="" type="checkbox"/> Enabled
Host	<input type="text" value="RevURL"/>
API Key	<input type="text" value="API Key Created in Rev"/>

Before you may link an encoder with Vbrick Rev so that it may be used as a video source, you must enable and configure it to recognize Rev in the **System Configuration** menu. If you do not complete these fields before you add your encoder as a device in Rev, your encoder will not function and link correctly with Rev.

Field	Description
Vbrick Rev Interface Enable	Check to enable so that the encoder may be used with Rev.
Host	Enter the URL for your Rev host.
API Key	An API key is created in Rev for your encoder. Enter that key in this field.

At this point, the encoder is ready and streaming to your DME.

Link a DME to Vbrick Rev

The DME in this streaming configuration is used as a destination point. It must be linked to your Rev instance to begin configuration set up.

Additional Information: This step requires the URL of your Vbrick Rev instance and an API Key created in Rev. You may need to come back to this step after you have created an API key.
See: "Create an API Key in Rev for Vbrick Devices"

▼ To configure the DME to interface with Rev:

1. Navigate to **System Configuration > Rev Interface**.

To stream and store content from Vbrick Rev, you must first configure your DME to integrate with Rev. You must complete the fields below and click **Apply** before you will be able to add this DME as a device in Vbrick Rev.

Field	Description
Rev Interface Running	Indicates whether or not the DME service that communicates with Rev is running or not. This service is responsible for communicating with Rev and must be running for communication between the DME and Rev to occur (videos can still be accessed on the DME by Rev). If the service is not running and set to false, toggle and save the Rev Enabled checkbox to restart the service. If you experience further trouble with the service restarting, contact Vbrick Support Services.
Rev Enabled	Select to enable integration with Rev with your DME. This allows your DME to be linked with Rev.
Rev Server URL	The URL of your Rev server.
API Key	An API key that is created through the Vbrick Rev interface. This key must match the key that is created for the device in Rev's Device module for the DME. Please note that the API key may not contain the special characters ``]%'&+'<

Field	Description
Default User	<p>Used to define the Uploader metadata attribute when using Rev's POST uploads/videos API to upload VOD files to Rev. This is normally used when the "no metadata" field is specified in the corresponding JSON file or anytime the Uploader field is not present in the JSON file. It is good practice to specify an Uploader to your video file so it is recommended that the JSON file contain this field or that you use the DME Default User field to specify the Uploader.</p> <p>If no value is specified in this field, the DME will supply a default value of "DME".</p> <p><i>Important: Whatever value is specified in this field, a valid Rev user account must match that value. For example, if the default value of "DME" is used, a Rev user name of DME must also be present.</i></p> <p>See: Required File Types for Bulk Video Upload topic for details.</p>
Default Folder to Store Media	If your DME is designated as a VOD storage device in Vbrick Rev, the folder content will be stored in for later access and playback.
MAC Address	The MAC Address of your DME device. Vbrick Rev will ask for this address when you add your DME as a device in Rev's Device module.
Retry Rev Uploads	Click to manually restart a bulk VOD ingestion process to Rev if it fails for any reason. See: Start a Bulk Video Upload to Rev topic.

Confirm DME Streaming Configuration Settings

To confirm that you have set up the DME correctly and that the encoder Transmitter is streaming to it as you have specified, check the **Multi-Protocol Connections** status page.

▼ To access the Multi-Protocol Connections status page:

1. Navigate to **Monitor and Logs > Multi-Protocol Connections**.
2. You should see the Transmitter you defined transferring IP Packets.
3. Note that it should also contain the stream name you defined in the **Announce Session Name Override** field on the encoder **Transmitter** page under the "Connected To" header.

Connected To	Stream Type	URLs to Copy	IP Address	Packets/Segments Sent	Packets/Segments Lost	Time Connected
rev_HQCamera1*	HLS Master Playlist	HLS Akamai	HLS: Not Reported Here	N/A	N/A	17 min 24 sec
rev_HQCamera1HQCamera1	HLS Sub Playlist	HLS Akamai	HLS: Not Reported Here	72693	0	17 min 24 sec
Hook Presenter	Receiving RTP	RTSP RTSP-TS RTMP	19.187.114.5544	4713362	27580	18 hrs 41 min 3 sec
sravan3	Receiving RTP	RTSP RTSP-TS RTMP	10.10.3.483944	244192	199	38 min 12 sec
HQCamera1	Receiving RTP	RTSP RTSP-TS RTMP	10.10.7.2188844	78714	1328	18 min 50 sec

You are now ready to set up each device in Vbrick Rev.

Add Vbrick Devices to Rev for Live Streaming

Once the Vbrick Encoder and DME are configured to work with Rev, you must create each one as a device in Vbrick Rev itself. Device set up in Rev includes:

- Creating an API key to work with your Rev devices
- Adding a Vbrick Encoder as a Device
- Adding a DME as a Device
- Adding a Presentation Profile
- Verifying Zones (if necessary)

Create an API Key in Rev for Live Streaming Devices

▼ To add an API key in Rev:

1. Navigate to **Admin > System Settings > API Keys > Add Key** button.

NAME	KEY	SECRET	AUTHORIZED REDIRECT URIS	ACTIONS
<input type="text" value="API KEY NAME"/>	<input type="text" value="API_KEY_SEQUENCE"/>		<input type="text" value="http://REVAPI_REDIRECT_URI.COM"/>	<input type="button" value="Cancel"/> <input type="button" value="Create"/>

Multiple redirect uris can be added here separated by newline

2. Enter a descriptive **API Key Name**.
3. Enter the **API Key**. You may use any combination of letters, symbols, and numbers of your choice.
Note: While an API Key is required for every device created in Rev, you do not have to create *separate* API Keys for each device. This is a distinction that is often overlooked. For example, you may create one API Key that is used for each location you have, such as headquarters (or the United States), and then use that same API Key for each device in *that* location if that is your preference. Then you may create a different API Key for a location in the UK or training rooms and use that key for the devices in only those locations.
4. Enter any redirect URIs needed if you plan to use any integrations and the OAuth API. This field is checked that the redirect URIs specified in the authorization and token request match and provides an additional security check to ensure that the correct user is making the request. Multiple URIs may be provided but at least one must match the authorization request to be redirected.
5. Click **Create**.
6. Use this same key in the device you plan to add and link to Rev for use. See the corresponding device's Admin technical manual for more information on where to enter this key.

Add the Live Streaming Vbrick Encoder to Rev

Using the same vbrick encoder you configured previously, create it as a device in Rev.

▼ To add an encoder device:

1. Navigate to **Admin > Devices > Source Devices and LDAP Connectors > Add a Device** dropdown.
2. Select **Add an Encoder** from the dropdown.

The screenshot shows a web form for adding a device. The title is 'VIRGINIA HQ CONFERENCE'. There is a back arrow and 'All Devices' link. The form fields are:

- Name:** Virginia HQ Conference
- Status:** Active (selected), Inactive
- MAC Address:** 0007DF01CC5A
- Video Streams:** VA HQ, http://10.10.4.172/, H264, Is Multicast (checkbox)

Field Name	Required	Description
Device Name	Yes	This can be a name of your choosing. This is a required field. Descriptive location or host name is recommended.
Status		The status of your device may be set to Active or Inactive upon adding it to your system.
MAC Address	Yes	The MAC Address is required. Copy the MAC Address for an encoder from the Monitor > Network page of VAdmin in the Encoder.
Video Streams	No	Adding a URL for the Encoder is not necessary in this case because the DME provides the video destination URLs.

3. Click the **Create** button.
4. After a few seconds, the encoder status should flip from **Uninitialized** to **Active**. If it does not, check your **MAC Address** field to ensure it is correct and the encoder configuration steps such as the **API key** and **Host** fields. See: **Add a Device in Vbrick Rev - Initial Configuration and Set Up** topic.
5. Your device is now ready to use with Rev.

Add the Live Streaming DME to Rev

Using the same DME you configured previously, create it as a device in Rev.

▼ To add a DME device:

1. Navigate to **Admin > Devices > DME Management** dropdown.
2. Select **Add a DME**.

ADD A DME

[< Back](#)

Device Name ✓

Status Active Inactive

MAC Address ✓

VOD Playback Device

Preposition Content

Field Name	Required	Description
Device Name	Yes	This can be a name of your choosing. This is a required field. Descriptive location or host name is recommended.
Status		The status of your device may be set to Active or Inactive upon adding it to your system.
MAC Address	Yes	The MAC Address is required. Copy the MAC Address for a DME from the System Configuration > Network Pages of VBAAdmin in the DME.
VOD Playback Device		Selected if the DME is intended to be used as a Video on Demand (VOD) playback device for serving stored video content. If more than one DME is designated as available for storage, then content will be pushed to all such designated DMEs.
Preposition Content		Available if VOD Playback Device is selected. Enable this setting to specify which DMEs on the network receive prepositioned video files for playback; should only be used if using MESH. See: Preposition DME Content topic in Rev's Online help.

Field Name	Required	Description
Video Streams	Yes	<p>In most cases, you may generate your URLs dynamically through the Create URLs tab. Particularly if you have been following this guide to set up Rev live streaming and recording with Vbrick Devices. You should also make sure the Enable HLS checkbox is selected for mobile streaming and the Add HLS Akamai Publishing Point checkbox to create HLS streams that will be used with Akamai. Keep in mind that stream names are case sensitive.</p> <p>Name, URL, Encoding Type, and Multicast may also be designated through the Advanced tab > Add URL button if adding manually through the Advanced tab. However, this tab should not be used unless you are very familiar with adding streams and associated settings.</p> <p>Video streams will later be selected on Presentation Profiles and Zones as viewing destinations.</p> <p>Note: DME v3.10 and greater devices are capable of registering fully qualified domain names in order to play HTTPS content to the Rev HTML5 video player. Therefore, DME streaming URLs may or may not contain an IP address hostname. See DME documentation for set up details.</p> <p>For more information on DME Video Streams in Rev, see: Add a Distributed Media Engine (DME) Video Stream topic Rev's admin section of Online help and "Add HLS and HLS Akamai Publishing Point Streams" below.</p>

- Click the **Create** button.
- After a few seconds, the DME status should flip from **Uninitialized** to **Active**. If it does not, check your **MAC Address** field to ensure it is correct and the DME configuration steps such as the **API key** and **Host** fields. See: **Add a Device in Vbrick Rev - Initial Configuration and Set Up** topic.

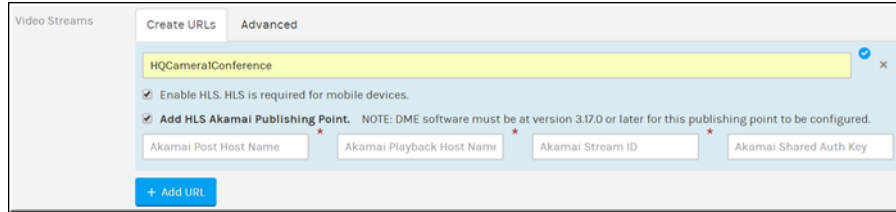
Your device is now ready to use with Rev.

Add HLS and HLS Akamai Publishing Point Streams

As noted in the **Video Streams** field above, when adding a DME device that you are using as a destination for Rev live streaming, make sure that you enable HLS and use the stream name you created in the **Announce Session Name Override** field on the encoder **Transmitter** page if you want to stream to mobile devices. This will also make the **Add HLS Akamai Publishing Point** checkbox visible so that the DME can stream to Akamai securely.

Contact Vbrick Operations for your Akamai credentials if you do not already have them.

Remember that stream names are case sensitive.



When the DME is saved and initializes, the video streams will be created automatically for you to select in your Presentation Profiles.

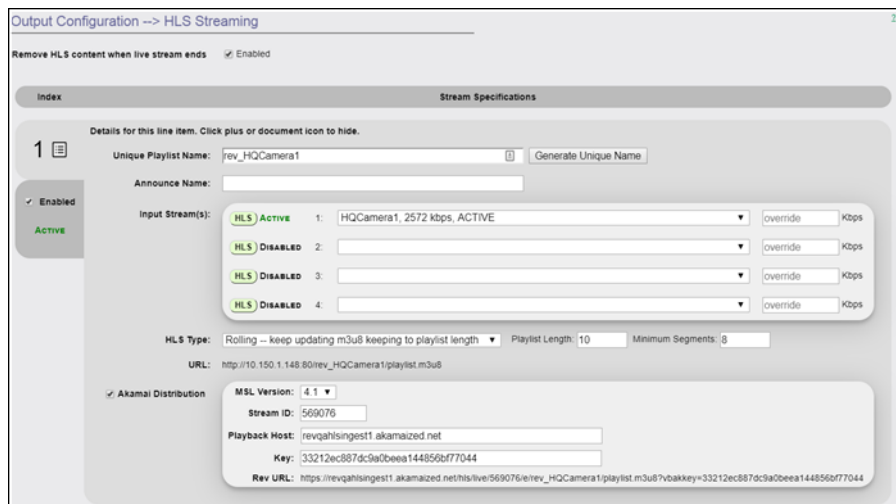
Tip: If you have zones and a zone hierarchy set up, make sure you add your new DME device to it. Otherwise, your video will not play!

Confirm HLS and HLS Akamai Publishing Point Stream Settings

Just as you verified your RTSP stream in the DME, you can verify that you have correctly added your HLS and HLS Akamai Publishing Point streams in Rev as well.

▼ To verify HLS and HLS Akamai Publishing Point Streams:

1. Log in to your configured DME.
2. Navigate to **Output Configuration > HLS Streaming**.
3. You should see the HLS stream you enabled in your Rev DME device as well as the Akamai streams distribution (if applicable).



Add a Live Streaming Presentation Profile to Rev

A **Presentation Profile** is used by Event Admins to control devices during the Webcast. Once you have added the Encoder and DME you configured as devices in Rev, you are ready to create a Presentation Profile to use in your Webcast Events that utilizes both of them. The encoder will be used as the video source while the DME will be the destination with the streaming URLs.

▼ To add a Presentation Profile:

1. Navigate to **Admin > Devices > Presentation Profiles > Add a Presentation Profile** button.
2. Complete each section of the **Presentation Profile** form detailed below and click **Create**.

Presentation Profile Name and Description

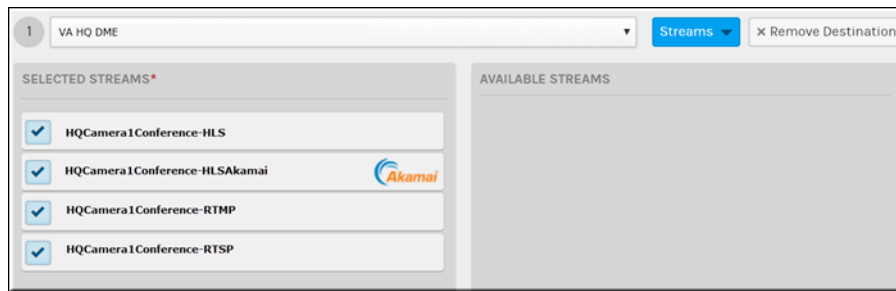
Field Name	Required	Description
Name	Yes	Enter a profile Name . This is a required field and must be unique.
Description		Enter a description that details what the profile will be used for.
Status		The status of the profile. When inactive, it will not be functional for use in events.

Source

Field Name	Required	Description
Video Source	Yes	Select the Encoder that you configured and linked to Rev in previous steps and click Update to apply the settings.

Destinations

Field Name	Required	Description
Select a Destination	Yes	Select the DME that you configured and linked to Rev in previous steps. Click on each of the Available Streams that appear to add them all to the Selected Streams list. Click Update to apply the settings. Note: Make sure you add all available streams that appear to add them all to the streams list. An RTSP unicast stream is required to record a live Rev Webcast and will be available in this list as a result of your DME configuration in the previous topic. You will also be able to choose HLS and Akamai streams that you configured.
Add Another Destination		Adds additional viewing destinations if desired.



Field Name	Required	Description
Available Streams		Available streams on the selected device that are available to be designated as viewing streams. Click the stream to add it to the Selected Streams column. It will then be used on the profile as a viewing stream.
Selected Streams		Streams that have been selected as viewing streams on the profile. Click a stream to remove it. It will be placed back in the Available Streams column and no longer available for use as a viewing stream.

You are now ready to create your Webcast Event using the Presentation Profile to live stream video from your Vbrick Encoder's video source.