

**VBrick** Application Note

VBrick H.264 Encoder | VBrick Enterprise Media System January 14, 2011 4430-0006-0000

## Using an H.264 Encoder with a Flash Media Server 4

If you install a Flash Media Server in VEMs (on the Global Assignments > Servers page) you will subsequently be able to play stored VOD files and Live Video Stream URLs. *These streams are unicast only*. This topic explains how to multicast a VBrick H.264 stream from an Adobe Flash Media 4 server and play it in a VEMS client. In order to run a Flash multicast solution you will need to install a Flash Media Enterprise Server 4 on a Windows Web Server 2008 machine. Additionally, a Flash 10.1 client is required for all client desktops who will be viewing the multicast streams. You can get Flash Media Enterprise Server 4 by going to Adobe's website at: http://www.adobe.com/products/flashmediaenterprise.

During the installation you will be prompted for a serial number which you get when purchasing the software. If you did not purchase the software, you can install a demo version that runs in demo mode and limits streaming time to 10 minutes. If you will be streaming for more than 10 minutes you will need to purchase the full Adobe Flash Media Enterprise Server 4 and get a serial number form Adobe. During the installation you will be prompted for a user name and password of your choice that will be used later with the Flash Media Server Administration Console. Use the these basic steps, as explained on the following pages, to multicast VBrick H.264 streams from a Flash Media Server:

- 1. Install a Flash Media Server.
- 2. Configure a VBrick H.264 Encoder
- 3. Configure VEMS for a Live Stream

## Installing a Flash Media Server

- ▼ To install a Flash Media Server:
- 1. On a 2008 Windows Server, double-click on the Flash Media Enterprise Server 4 installer and follow the installation instructions. Follow the prompts until the installation is complete. During the installation accept the default values except as noted.
- 2. When the installation is complete you will need to turn off Internet Explorer's **Enhanced Security Configuration** as explained below before you can use the Flash server's webbased administration console.
  - a. Close all instances of Internet Explorer.
  - b. Go to Start > Administrative Tools > Server Manager and click on Configure IE ESC.
- 3. Turn off Enhanced Security Configuration for Administrators only:

わ Interne	et Explorer Enhanced Security Configuration		
Interne exposu	t Explorer Enhanced Security Configuration (IE ESC) reduces the re of your server to potential attacks from Web-based content.		
Interne default	t Explorer Enhanced Security Configuration is enabled by for Administrators and Users groups.		
Adminis	trators:		
۲	C On (Recommended)		
۲	€ off		
Users:			
۲	On (Recommended)		
8	C off		
More at	More about Internet Explorer Enhanced Security Configuration		
	OK Cancel		

4. Go to Start > All Programs > Adobe > Flash Media Server 4 > Adobe Flash Media Administration Console. You will be prompted to install Flash 10.1. After the installation is complete, login to the console using the username and password you supplied during the Flash Enterprise Media Server 4 installation. As shown below use localhost for the Server Address.

Flash Media Administration Console				
Enter your serve	r information			
Server Name:	Server 1			
Server Address:	localhost			
Username:	Administrator			
Password:	*****			
	Login Revert			

5. After logging in go to **Manage Servers > Server Log** and keep this page displayed. It will be used in Step 10 to verify the server is properly configured.



- 6. You will need to create a manifest file the Flash player will use to find the multicast stream. To do this go to C:\Program Files\Adobe\Flash Media Server 4\tools\multicast\configurator and double-click on configurator.html. This will display a page with the Multicast Config Tool. Then perform the following steps (see screenshot below):
  - a. From the Select a Multicast Type dropdown choose IP Multicast.
  - b. For Stream Name enter the name of the stream you want to multicast.
  - c. For Publish Password choose the password you want to use for the multicast stream.
  - d. For **Group Name** create a name for the group. (This name is arbitrary but must match the **RTMP Username** used when configuring the encoder Transmitter in VBAdmin.)

- e. For IP Multicast Address and Port choose the multicast address and port you wish to use.
- f. Then click Generate.

ADOBE <sup>®</sup> FLASH <sup>®</sup> MEDIA SERVER 4				
Multicast Config Tool				
Select a Multicast Type:	RTMFP URI: rtmfp:			
Description: Pure IP multicast. No peer	Stream Name: vbricklive			
Interaction will be enabled and no server connection will be made.	Publish Password: vbrickpassword			
	Group Name: Make Unique vbrickname			
	IP MulticastAddress and Port: 224.0.0.250:30000			
	Generate			
Publisher Stream Name:				
vbricklive?fms.multicast.type=2&fms.m	nulticast.groupspec=G9 Copy			
View Manifest File Save Man	ifest File Show Groupspecs			

When done click **Save Manifest File** and save the file on the Flash (i.e. Apache) web server in C:\Program Files\Adobe\Flash Media Server 4\webroot. It needs to be reachable by the VEMS server which will use the manifest file to initiate the multicast session. In addition, the manifest file must be named manifest.f4m. *If you use multiple multicast streams and therefore have multiple manifest.f4m files, they will need to be saved in different folders.* 

If you put the manifest.f4m file on a separate server you will need to add the crossdomain.xml file to that server's default website home directory. This file is located in the following VEMS directory: C:\Program Files\VBrick\MCS\utils\Flash.

Due to a bug in the Multicast Config Tool you will have to edit the manifest.f4m file after saving it. Open the file with Wordpad, find the word rtmfpGroupspec and change it to groupspec; then find the word rtmfpStreamName and change it to multicastStreamName. Be sure to save your changes when done.

7. Next you will need to create a parent folder to which you will point the multicast streams from the VBrick encoder. To do this go to C:\Program Files\Adobe\Flash Media Server 4\webroot\ and create a folder named multicast.

## Configuring a VBrick H.264 Encoder

After the Flash Media Server is configured as explained in the previous steps, you will need to configure the VBrick encoder (v3.0 or higher) so it will stream to the Flash Media Server. For general information about configuring RTMP streams, see the "Program Configuration > Streams" topic in the *H.264 Admin Guide*. The following image shows an example of an RTMP stream in the VBAdmin management interface.

Configuration Menu	VBrick	VBAdmin		
System Configuration	Program Configuration> Streams 2			
Network     General     Usernames & Passwords     Manage Configuration     Advanced Configurations     Management SAP     Security	Choose Stream Used by Transmitters Used by Servers Used by Archivers	Stream 4 - VBrick Flash Test 💌 4 None None		
<ul> <li>Security</li> <li>Logging</li> <li>Event Triggering</li> <li>Passthrough</li> <li>SNMP Yasswords</li> <li>SNMP Yasswords</li> <li>SNMP Traps</li> <li>Video/Audio Configuration</li> <li>Video</li> <li>Audio</li> <li>Program Configuration</li> <li>Global</li> <li>Programs</li> <li>Streams</li> <li>Transmitters</li> <li>Servers</li> <li>Archivers</li> <li>Monitor</li> <li>System Logs</li> <li>Program Status</li> <li>Global &amp; Streams</li> <li>Transmitters</li> <li>Servers</li> <li>Archivers</li> <li>Imonitor</li> <li>System Logs</li> <li>Program Status</li> <li>Global &amp; Streams</li> <li>Transmitters</li> <li>Servers</li> <li>Archivers</li> <li>Transmitters</li> <li>Servers</li> <li>Archivers</li> <li>Device Tests</li> <li>Device Tests</li> <li>Logout</li> <li>Help</li> </ul>	Enable Stream Stream Name Transport Type Select Video Rate Select Audio Rate Estimated Bit Rate	✓ Enabled         ✓ Brick Flash Test         RTMP         ✓ Video Rate 1         ▲ Audio Rate 1         ▲ 4073156		

- ▼ To configure a VBrick encoder:
- 1. Login to VBAdmin and go to Program Configuration > Transmitters. Then perform the steps listed below:

VBrick	VBAdmin		
Program Configuration> Transmitters			
SDP File URL (click to play or save)	N/A		
Choose Transmitter	Transmitter 4 -		
Enable Transmitter	Enabled		
Transmitter Name			
Stream Select	Stream 4 - VBrick Flash Test 💌		
Transport Type	RTMP		
Destination	IP Address 💌 <flash_server_ip></flash_server_ip>		
Destination Port	1935		
RTMP Application	multicast		
RTMP Stream	<publisher_stream></publisher_stream>		
RTMP Username	<group_hame></group_hame>		
RTMP Password	•••••		
Show advanced settings			
Apply Revert Default	Save Finish Edit		
	Program Configuration> Trans         SDP File URL (click to play or save)         Choose Transmitter         Enable Transmitter         Transmitter Name         Stream Select         Transport Type         Destination         Destination Port         RTMP Application         RTMP Username         RTMP Password         Show advanced settings		

- a. Make sure the Transport Type is RTMP.
- b. The Destination must point to the Flash Media Server.
- c. The Destination Port should be 1935.
- d. The **RTMP** Application needs to be multicast.
- e. The **RTMP Stream** must be the **Publisher Stream Name** that was created by the **Multicast Config Tool** when you clicked **Generate** in Step 6f above. (This is a long string: be sure you copy and paste the entire string.)



- f. The RTMP Username must be the Group Name you entered in Step 6d above.
- g. The RTMP Password must be the password entered in Step 6c above.
- h. When done make sure the **Enable Transmitter** box is checked and then click **Apply** and **Save**.
- 2. Test the configuration. An easy way to see if the VBrick encoder and the Flash Server are communicating is to go back to the Flash Media Server's Administration console log screen (see Step 5 above) and then disable and re-enable the stream from VBAdmin using the Enable Transmitter checkbox on the Program Configuration > Transmitters page. You should see the following message on the Server Log page:



## Configuring VEMS for a Live Stream

The next step is to configure VEMS (v5.3 or higher) so the live Flash multicast stream can be played.

- ▼ To configure VEMS to play a multicast stream:
- 1. Go to Global Settings > URLs. In the URL field, type in a URL with the following format: http://<Flash\_Media\_Server\_IP>/<Manifest\_File\_Location>/manifest.f4m

VE	rick
Getting Started Add/Modify a URL for a Live Video Stream	
-Global Settings Select entered Live Stream to update:	
Global Assignments VBrick-FlashTest	
Custom Fields	
Stream Restrictions	
Servers	
VBricks Add or Undate:	
Control Devices URL:	
Presentation Devices http://172.22.2.88/vbricklive/manifest.f4m	
IP Receivers Type: Flash (I his URL is in the LAN Zone)	
Recorders Title: VBrick-FlashTest	
Script Devices Add Modify Delete	
Scripts	
URLs	
Priority Alert VoD Content	
Manage Playlists	
Access Logging	
Zones	

Flash_Media_Server_IP	Use IP Address of Flash Media Server 4.
Manifest_File_Location	Location of manifest file described in Step 6. If you put the manifest.f4m file under the Apache (included with Flash Media Server 4) server's webroot in a folder named vbricklive, the url will look like this: http://172.22.2.88/vbricklive/manifest.f4m

2. After adding the URL you can log into a VEMS client and play the named stream.

VBrick	Video.	Empowered	by VBrick		Flash All Live Media All	SEARCH
MEDIA LIBRARY LIVE MEDIA	CHANNEL GUIDE SCHEI	DULING MORE	TOOLS ×		welcome: gregt	<u>Help Logout</u>
Date Range: All		Filter By Date	•			
Show 5 💽 per page	Pag	e: 1 🔹 🕢 Showing	1 of 1 🕞			
Title  ApuFlashSrcDecoder Pro VBrick-FlashTest	<u>Dat</u> gram 1	<u>e</u>				
				stopped		
				OPTIONS -	POP-UP	
			<b>T</b>	vonuk-riashi est		

**Note** • Flash multicast streams cannot be recorded at this time.

• Macintosh desktop clients will not play Flash multicast streams.