VBrick Application Note

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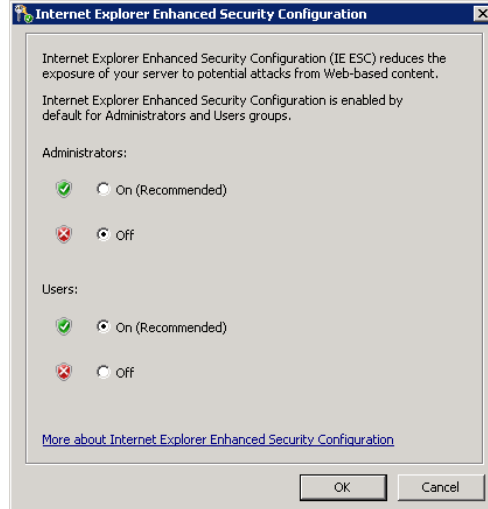
4. Go to **Start > All Programs > Adobe > Flash Media Server 4 > Adobe Flash Media Administration Console**. You will be prompted to install Flash 10.1. After the installation is complete, login to the console using the username and password you supplied during the Flash Enterprise Media Server 4 installation.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

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.
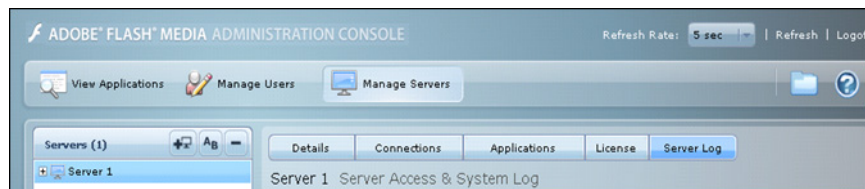
6. You will need to create a manifest file the Flash player will use to find the multicast stream. To do this go to `C:\Program Files\Adobe\Flash Media Server 4\tools\multicast\configurator` and double-click on `configurator.html`. This will display a page with the **Multicast Config Tool**. Then perform 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**.

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.

▼ To configure a VBrick encoder:

1. Login to VBAdmin and go to Program Configuration > Transmitters. Then perform the steps listed below:

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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:
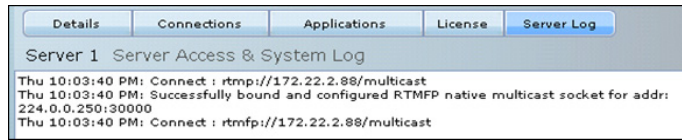
Configuring VEMS for a Live Stream

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`
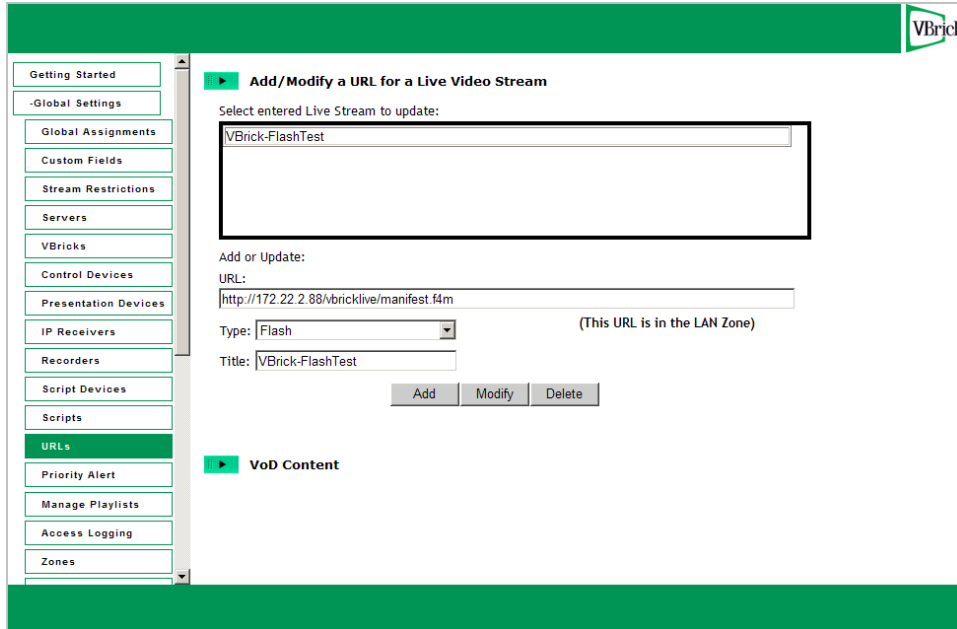
`Flash_Media_Server_IP`	Use IP Address of Flash Media Server 4.
`Manifest_File_Location`	Location of manifest file described in Step 6. If you put the `manifest.f4m` file under the Apache (included with Flash Media Server 4) server's `webroot` in a folder named `vbricklive`, the url will look like this: `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.
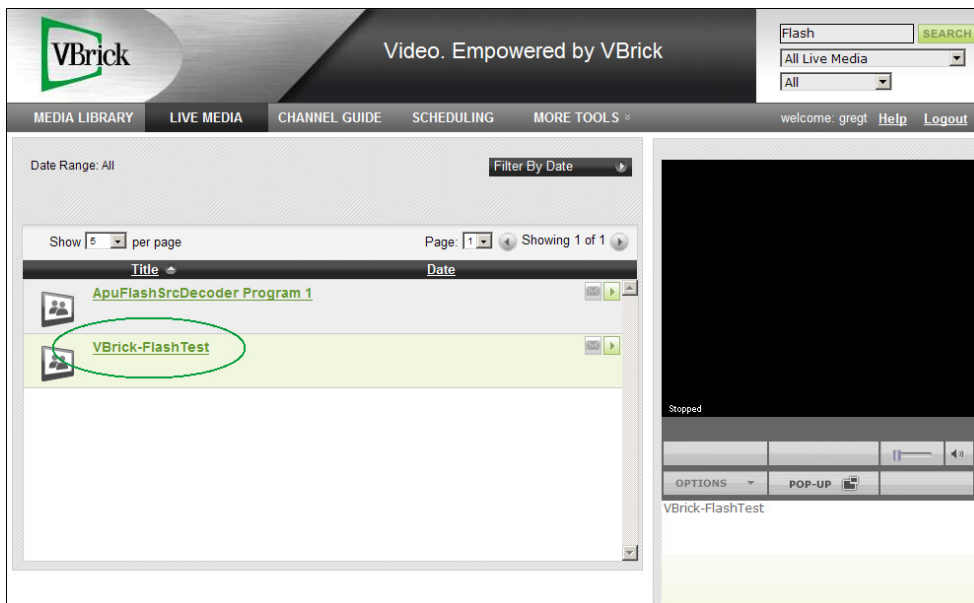
Note • Flash multicast streams cannot be recorded at this time.

• Macintosh desktop clients will not play Flash multicast streams.

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