EvoStream Media Server

Web User Interface

User Guide

V1.7.0
Table Of Contents

I. Document Definitions ..............................................................................................................3

II. Overview ...............................................................................................................................5

III. Installation and Startup .......................................................................................................6
   1. Install and Configure the EMS .........................................................................................6
   2. Environment Installation .................................................................................................6
   3. Web UI Installation ...........................................................................................................6

IV. Getting Started ..................................................................................................................8
   1. Installing License ..............................................................................................................8
   2. Connecting to Server .......................................................................................................8
   3. Server Commands ..........................................................................................................9
   4. Stream Details .................................................................................................................15

List of Figures
Figure 1 : EMS Web UI Home Page ......................................................................................7
Figure 2 : Connect to EMS ......................................................................................................9
Figure 3 : Stream Details .......................................................................................................15

List of Tables
Table 1: Definition of Terms ..................................................................................................4
## Document Definitions

<table>
<thead>
<tr>
<th>TERM</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>CURL</td>
<td>A tool to transfer data from or to a server</td>
</tr>
<tr>
<td>DASH</td>
<td>Dynamic Adaptive Streaming over HTTP. HTTP adaptive bitrate streaming defined by ISO.</td>
</tr>
<tr>
<td>EMS</td>
<td>EvoStream Media Server</td>
</tr>
<tr>
<td>EWS</td>
<td>EvoStream Web Server</td>
</tr>
<tr>
<td>ERS</td>
<td>EvoStream Rendezvous Server</td>
</tr>
<tr>
<td>HDS</td>
<td>HTTP Dynamic Streaming. HTTP adaptive bitrate streaming defined by Adobe.</td>
</tr>
<tr>
<td>HLS</td>
<td>HTTP Live Stream. HTTP adaptive bitrate streaming defined by Apple.</td>
</tr>
<tr>
<td>HTTP</td>
<td>Hyper-Text Transfer Protocol. The basic protocol used for web-page loading and web browsing. Also used for tunneling by many protocols. TCP based.</td>
</tr>
<tr>
<td>IDR</td>
<td>Instantaneous Decoding Refresh – This is a specific packet in the H.264 video encoding specification. It is a full snapshot of the video at a specific instance (one full frame). Video players require an IDR frame to start playing any video. “Frames” that occur between IDR Frames are simply offsets/differences from the first IDR.</td>
</tr>
<tr>
<td>JSON</td>
<td>JavaScript Object Notation</td>
</tr>
<tr>
<td>Lua</td>
<td>A lightweight multi-paradigm programming language</td>
</tr>
<tr>
<td>MSS</td>
<td>Microsoft Smooth Streaming. HTTP adaptive bitrate streaming defined by Microsoft.</td>
</tr>
<tr>
<td>PHP</td>
<td>A server-side scripting language designed for web development but also used as a general-purpose programming language</td>
</tr>
<tr>
<td>RTCP</td>
<td>Real Time Control Protocol – An protocol that is typically used with RTSP to synchronize two RTP streams, often audio and video streams</td>
</tr>
<tr>
<td>RTMP</td>
<td>Real Time Messaging Protocol – Used with Adobe Flash players</td>
</tr>
<tr>
<td>RTMPT</td>
<td>Real Time Messaging Protocol Tunneled – Essentially RTMP over HTTP</td>
</tr>
<tr>
<td>RTP</td>
<td>Real-time Transport Protocol – A simple protocol used to stream data, typically audio or video data.</td>
</tr>
<tr>
<td><strong>RTSP</strong></td>
<td>Real Time Streaming Protocol – Used with Android devices and live streaming clients like VLC or Quicktime. RTSP does not actually transport the audio/video data, it is simply a negotiation protocol. It is normally paired with a protocol like RTP, which will handle the actual data transport.</td>
</tr>
<tr>
<td><strong>swfURL</strong></td>
<td>Used in the RTMP protocol, this field is used to designate the URL/address of the Adobe Flash Applet being used to generate the stream (if any).</td>
</tr>
<tr>
<td><strong>tcURL</strong></td>
<td>Used in the RTMP protocol, this field is used to designate the URL/address of the originating stream server.</td>
</tr>
<tr>
<td><strong>TOS</strong></td>
<td>Type of Service. This is a field in IPv4 packets used by routers to determine how traffic should be dispersed, usually for prioritizing packets.</td>
</tr>
<tr>
<td><strong>TTL</strong></td>
<td>Time To Live. This is a field in IPv4 packets used by routers to determine how many gateways/routers the packet should be able to pass through.</td>
</tr>
<tr>
<td><strong>URI</strong></td>
<td>Universal Resource Identifier. The generic form of a URL. URI’s are used to specify the location and type of streams.</td>
</tr>
<tr>
<td><strong>URL</strong></td>
<td>Uniform Resource Locator. This is a specific form of the URI used for web browsing (<a href="http://ip/page">http://ip/page</a>).</td>
</tr>
<tr>
<td><strong>VOD</strong></td>
<td>Video On Demand</td>
</tr>
</tbody>
</table>

**Table 1: Definition of Terms**
II. Overview

This document provides instructions on how to use the Web-based User Interface for the EvoStream Media Server. It will cover the basics of installing and using the Web-based User Interface.

This document is written for users of the EvoStream Media Server. It is expected that you already have a basic functional knowledge of the EvoStream Media Server. Please read the EMS User Guide prior to working with the Web UI!
III. Installation and Startup

1. Install and Configure the EMS

Following the instructions that can be found in the EMS User Guide, install the EMS and verify that it is functioning on your platform. You must be sure that the EMS is functional on your system prior to working with the UI. This will greatly simplify any problem solving that may need to be done with the installation of the Web UI!

2. Environment Installation

The Web-based UI requires the evo-webserver which is the EMS’s local web server and installed along the installation of the EMS package.

The evo-webserver listens to port 8888 as default.

User’s may still use other web-servers such as:

1. NGINX
2. LIGHTTPD
3. Apache: WAMP/LAMP, XAMPP, etc.
4. IIS

Required Modules to Install:

1. PHP5 – PHP language translation modules
2. PHP_CURL* – Handles external HTTP Post/Get requests. Required to interact with the EMS.

*Some recent distributions of WAMP/LAMP have been released with corrupt PHP_CURL modules! If the Web UI does not cause any logging events on the EMS (see below), then your CURL module may be inactive or corrupt.

Please refer to the documents of your chosen web server for installation and configuration directions.

3. Web UI Installation

The Web UI is located in the evo-webroot folder which is the evo-webservers’ web root. If user will use other web server, simply copy the contents of the EMS Web UI into the Web Server’s web root.

Test the installation by navigating to:

http://localhost:8888/EMS_Web_UI

Notes:

- EMS should be running to open Web UI
- localhost – IP address of the EMS
- 8888 - Web server’s assigned port.
This will open the EMS Web UI's home screen.

Figure 1: EMS Web UI Home Page
IV. Getting Started

1. Installing License

User’s may opt to install license manually by copying the License.lic to the config folder or through Web UI by following the steps below:

1. Run EMS
2. Open Web UI in browser
3. Click Install EMS License in the upper left corner of the page

4. Browse the license file, and enter the directory where license will be installed
5. Click Install License
6. A successful message will prompt for successful installation

Note:
Restart EMS to apply the license file added

2. Connecting to Server

User’s can access EMS as long as the IP address is known. To connect to the desired server:

1. Enter the web server root directory under the Enter webserver root directory: link
2. Enter the IP address in the address bar under Enter IP address of EMS:
   Note: IP address given is the localhost as default.
3. Click Connect
3. **Server Commands**

There are several commands in the Web UI that makes functions as easy as 1-2-3. Simply choose the API in the Server Commands’ drop down list and fill up the necessary fields.

**A. Add an inbound stream**

This command is similar to pullstream. To add a stream, do the following steps:

1. Enter the stream name and stream source to be added
2. Select whether the stream will be forced to TCP or not

**Notes:**

- Stream name is for the `localStreamName` parameter under `pullStream`
- Stream source is for the URI under `pullStream`
- A successful add stream will list the stream under Stream List
B. Create an HLS stream

To create an HLS stream, simply follow these steps:

1. Select a stream under Stream List
2. Enter the Target Folder where the created HLS will be saved
3. Enter the Group Name for the HLS folder
4. Enter the Chunk Length (in seconds) for the chunk length value

5. Click **Create HLS Stream**

Notes:
- Created HLS is saved in the target folder
- A successful create HLS will list the stream under Stream List

C. Create an HDS stream

To create an HDS stream, simply follow these steps:

1. Select a stream under Stream List
2. Enter the Target Folder where the created HDS will be saved
3. Enter the Group Name for the HDS folder
4. Enter the Chunk Length (in seconds) for the chunk length value
5. Click **Create HDS Stream**

![Create HDS Stream](image)

Notes:
- Created HDS is saved in the target folder
- A successful create HDS will list the stream under Stream List

**D. Create the MSS stream**

To create an MSS stream, simply follow these steps:
1. Select a stream under Stream List
2. Enter the Target Folder where the created MSS will be saved
3. Enter the Group Name for the MSS folder
4. Enter the Chunk Length (in seconds) for the chunk length value
5. Click **Create MSS Stream**

![Screenshot of MSS stream creation interface](image)

**Notes:**
- Created MSS is saved in the target folder
- A successful create MSS will list the stream under Stream List

**E. Create a DASH stream**

To create a DASH stream, simply follow these steps:

1. Select a stream under Stream List
2. Enter the Target Folder where the created DASH will be saved
3. Enter the Group Name for the DASH folder
4. Enter the Chunk Length (in seconds) for the chunk length value
5. Click **Create DASH Stream**

5. **Create DASH from “test_sintel” stream?**

   ![Create DASH Stream button]

- **Notes:**
  - Created DASH is saved in the target folder
  - A successful create DASH will list the stream under Stream List

5. **F. Update stream list**

   The Stream List provides the list of streams available in EMS. Simply choose the **Update stream list** under the Service Commands and automatically the Stream List will update.

   ![Stream List table]

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>URI</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>test_sintel</td>
<td>rtmp://s2pocxmtymn2k.cloudfront.net/cf/trmp4.sintel.mp4</td>
<td>pull</td>
</tr>
<tr>
<td>9</td>
<td>test_sintel</td>
<td><a href="http://127.0.0.1/Test_HLS_Group/playlist.m3u8">http://127.0.0.1/Test_HLS_Group/playlist.m3u8</a></td>
<td>his</td>
</tr>
<tr>
<td>10</td>
<td>test_sintel</td>
<td><a href="http://127.0.0.1/Test_HDS_Group/manifest.f4m">http://127.0.0.1/Test_HDS_Group/manifest.f4m</a></td>
<td>hds</td>
</tr>
<tr>
<td>11</td>
<td>test_sintel</td>
<td><a href="http://127.0.0.1/Test_MSS_Group/test_sintel/manifest.ismc">http://127.0.0.1/Test_MSS_Group/test_sintel/manifest.ismc</a></td>
<td>mss</td>
</tr>
<tr>
<td>12</td>
<td>test_sintel</td>
<td><a href="http://127.0.0.1/Test_DASH_Group/manifest.mpd">http://127.0.0.1/Test_DASH_Group/manifest.mpd</a></td>
<td>dash</td>
</tr>
</tbody>
</table>
G. Send MPEG-TS

The Send MPEG-TS command allows you to create a UDP based MPEG Transport Stream to some destination. The destination IP can be a unicast, broadcast or multicast address. Be careful not to use a port that is reserved or already in use!

To create a DASH stream, simply follow these steps:
1. Select a stream under Stream List
2. Enter the Target Address where is the stream will be sent
3. Enter the Target Port to listen to

<table>
<thead>
<tr>
<th>Server Commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send MPEG-TS</td>
</tr>
</tbody>
</table>

**Target Address**
192.168.2.35

**Target Port**
7575

Create MPEG-TS for “test_sintel”?

- [ ] Send MPEG-TS Stream
- [x] Stop all MPEG-TS Streams

4. Click **Send MPEG-TS Stream**

MPEG-TS packets of “test_sintel” being sent to 192.168.2.35:7575.

H. Remove existing stream

Added stream can be removed using the Web UI. This command is similar to the removeConfig API.
1. Select a stream to remove

<table>
<thead>
<tr>
<th>Server Commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove existing stream</td>
</tr>
</tbody>
</table>

Remove the stream “test_sintel”?

- [ ] Remove Stream

2. Click **Remove Stream**

Test_sintel was removed successfully.
4. Stream Details

When streams are selected in the Stream List, the EMS will display the URIs that can be used to get the stream from the EMS. The RTMP URI can be used by Flash-Based video players. The RTSP URI can be used by players such as VLC, QuickTime and by Android devices.

![Stream Details](image)

**Figure 3**: Stream Details

Please refer to EMS API and User Guide for more information.