Ezserver User Guide

www.ezhometech.com

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1. Introduction

Artificial Intelligence (AI) IPTV is the new generation of IPTV. Traditional IPTV provides static channel list, movie list and categories to users. AI IPTV is to provide dynamic, Intelligence channel list., movie list and categories to users.

Traditional IPTV provides all channel names or icons to users, so users need to see them that some channels were never watched or disliked by users. Or users need to pre-define their favorite channel list. AI IPTV can Intelligently and dynamically provides certain channels that users often watch or like at one time.

To provide dynamic, Intelligence Information to users, Ezserver uses one of the important AI theory, called Vague Set that is an extension of fuzzy set. Vague set was found by Ezhometech Founder, Mr. Gau and published in "*IEEE Transaction on system, Man and Cybernetics"* in 1993.

Ezserver is a media streaming server with Artificial Intelligence (AI) capability. It receives live video from UDP, HTTP, RTMP and HLS links, *ecording* and *streaming* them into players on PC, Android, iOS, STB and Smart TV. EZhometech also provides Channel/Movie/User Management, Security, Statistics and REST API with Ezserver. Additional, Ezserver can support a lot of famous players on PC, Google android app, Apple app, STB and Smart TV. Specially, we are proud to provide the fastest video response to let our customers provide the best video streaming.

2. System requirement

Hardware requirement

Minimum requirement

- **Processor: Dual-Core**
- **RAM: 8GB**
- **Network Interface: 1G BASE**
- **Hard Disk Space: 150MB**

800 connection requirement

- **Processor: Quad-Core (Intel i7 4970)**
- **RAM: 16GB**
- **Network Interface: 1G BASE**
- **Hard Disk Space: 150MB**

4500 connection requirement

- **Processor: 2x Intel Six-Core Xeon E5-2620v3**
- **RAM: 128GB**
- **Network Interface: Upload 10G BASE / Download 10G BASE**
- **Hard Disk Space: 150MB**

Software requirement

Linux platform

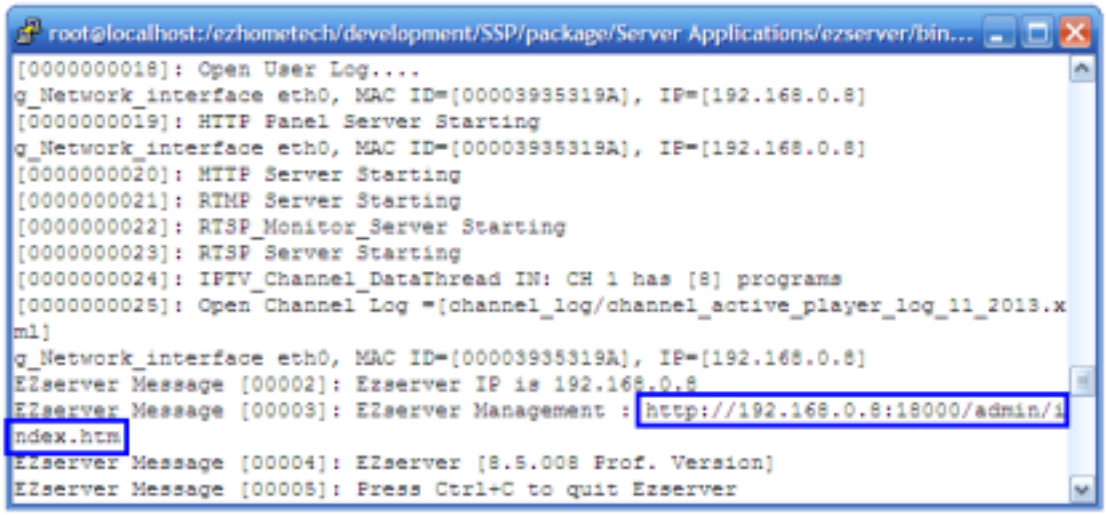
- **64-bit**
- **Debian (**recommended**)**
- **Centos**
- **Ubuntu**

3. System installation

Refer the below steps to install ezserver and IPTV Panel.

- copy install.sh into /root or /home folder
- chmod 777 install.sh
- ./install.sh
- After installation, go to ezserver_enterprise folder.
- **cd ezserver_enterprise**
- **ls –al serial_number.txt**
- **send** serial_number.txt to sales@ezhometech.com for license activation.
- **go to** ezserver_enterprise **to start or shutdown ezserver.**
  - **Start Ezserver**
    - **cd ezserver_enterprise**
    - ./start.sh
  - **Shutdown Ezserver**
    - **cd ezserver_enterprise**
    - ./shutdown.sh

When Ezserver shows http://server_ip:18000/admin/index.htm, it means Ezserver starts successfully.



- Login Panel by http://server_ip:18000/admin/index.htm
- **IMPORTANT --- Change root user to your own ID (refer Administrator profile setting topic) .**

You can change the setting after Installation, you can run

- ./setup.sh

to change the setting.

Setup example steps**:**

A. Please use Linux command netstat **or** nmap **to find the unused port no.**

B. Run setup.sh to setup Ezserver to create serial_number.txt for License Key.

./setup.sh

1. **Please select network interface (current setting is eth0)**

eth0

lo

→eth0

2. **Please type new panel port no. (18000): 18000**
3. Please type new http streaming port no. for players (8000): 8000
4. Do you want to setup auto_start mode?(y/n) y
5. **Setup successfully…**
6. **Send serial_number.txt to sales@ezhometech.com for license activation…**

4. Administrator Web Managment

Introduction

It supports Internet browser such as *Internet Explore*, *Chrome*, *Firefox* or *Safari* to login by the below URL path.

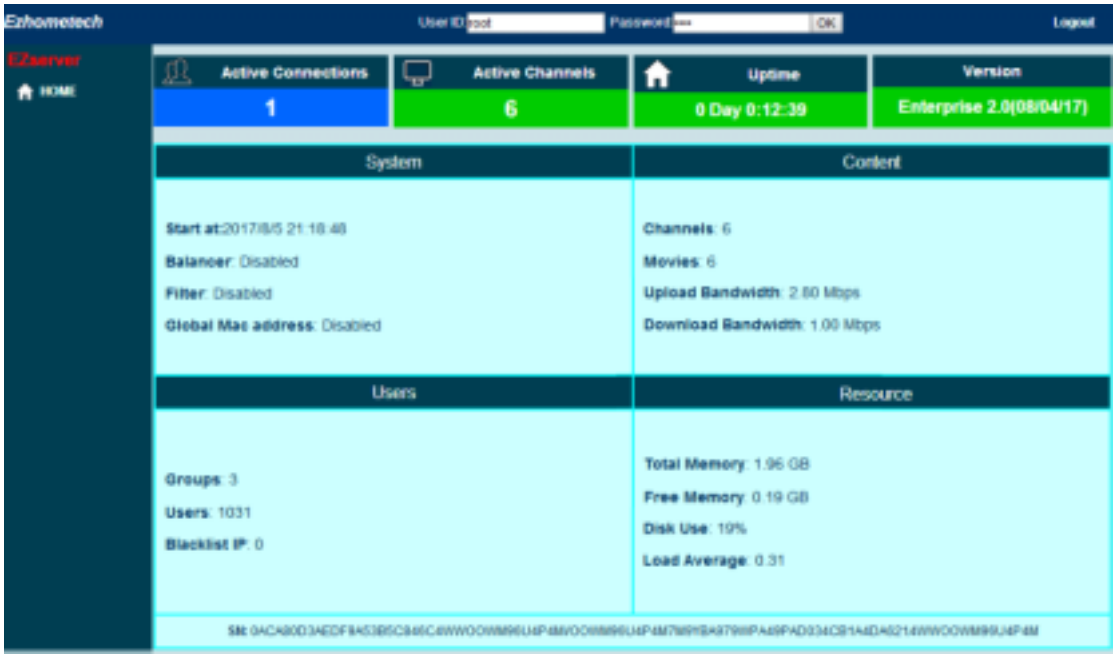
http://Ezserver_IP:18000/admin/index.htm

It provides the below management

- Home: **System Information.**
- Channel: **Channel Management**
- Movie: **Movie Management**
- User: **Subscriber Management**
- Group: **Group Management**
- Player: **Online Player Information**
- EPG: **EPG Management**
- Reseller: **Reseller Management**
- Player Filter: **Filter all players**
- Alert Player: **Alert Player Information**
- MAC Addr.: **MAC Address Control**
- Blacklist: **Automatic blacklist management**
- Balancer: **Load balancing Management**
- Setting: **Protocol port setting**
- Statistics: **Channel Statistics**
- Shutdown: **Shutdown Ezserver**

- Log: **System Log**

Home



Version	• **Ezserver Version**
Start at	• **EZserer Starting time**
Uptime	• **Ezserver Uptime**
Group	• **Total Group No.**
Subscriber	• **Total Subscriber No.**
Streaming Connection	• **Total Active Player No.**
Blacklist IP	• **Total Blacklist No..**
Channels	• **Total Channel No.**
Active Channels	• **Total Active Channel No.**
Movie	• **Total Movie No.**
Upload Bandwidth	• **Total Upload Bandwidth**
Download Bandwidth	• **Total Download Bandwidth**
Total / Free Memory	• **System total available memory and free memory**
Ezserver Memory Usage	• **Ezserver running time memory**
Disk Use	• **System Disk use percentage**
Load Average	• **System Load average**

Channel

Menu Bar

Refresh	**Refresh checked channels**
Import	**Import Channel List from m3u list URL**
Delete	**Delete checked channels**
OFF	**Show OFF channels**
Search	**Search Channel Name**

Button

Add	**Add a new channel**
Copy	**Copy 10 channels**
Save	**Save channel definition**
More	**More Channel information**

Content

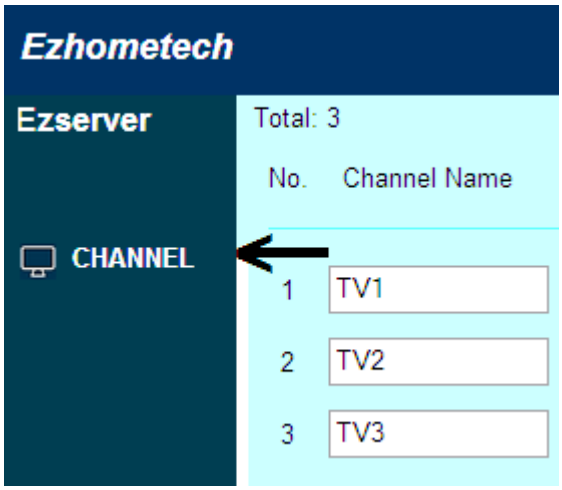
Channel No	**For player input url by no, ex. http;//192.168.0.8:18000/1.ch**
Channel Name	**For player input url by name. Ex. http://192.18.0.8.1800/tv1**
Media Source	**For RTP/UDP/HTTP/RTMP/Playlist input.** o **Playlist syntax : "playlist:/folder_path"** ▪ **Supports TS, MP4, FLV, AVI, MKV, MP3, JPEG, PNG** ▪ **The playing sequence of videos is by alphabetical order.** ▪ **ex. if the url is "playlist://middleware/videos/Movie", you have to create /ezserver_enterprise /middleware/videos/Movie folder. And upload videos or music into this folder.** • **RTP syntax : "rtp://por_no"** • **rtp://7001** • **UDP syntax : "udp://por_no"** • **udp://7001** • **RTMP syntax : "rtmp://url"** • **rtmp://207.182.149.36/live/live1** • **HTTP syntax : "http://ip:port_no/path"**

	• **http://172.16.10.51:7001/1.ch** • **http://172.16.10.51:7001/1.mp4** • **HLS m3u8 syntax : "http://ip:port_no/chx.m3u8"** • **http://172.16.10.51/ch1.m3u8** o **TS Playlist syntax : "dir:/folder_path"** • **Supports TS Format** • Needs to create the folder in ezserver media/videos folder first. • **ex. if the url is "dir://media/videos/Movie", you have to create /ezserver_enterprise /media/videos/Movie folder. And upload TS format videos into this folder** • **The playing sequence of videos is by alphabetical order.**
Icon Path	**The path of Channel icon for players**
Category	**The category for each channel.**
Type	**Support Live, Movie, Delay, DVR and Inactive channels.**
Status (Uptime)	• ON (Uptime) • OFF • Connecting
Bitrate	• **Channel Upload Bitrate**

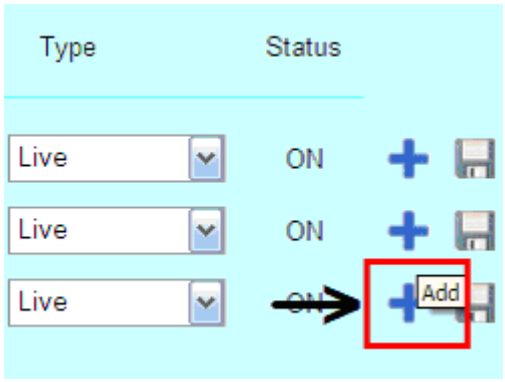
Add new channel

Follow the below steps to add new channel.

Step1**: Click "Channel" Button.**



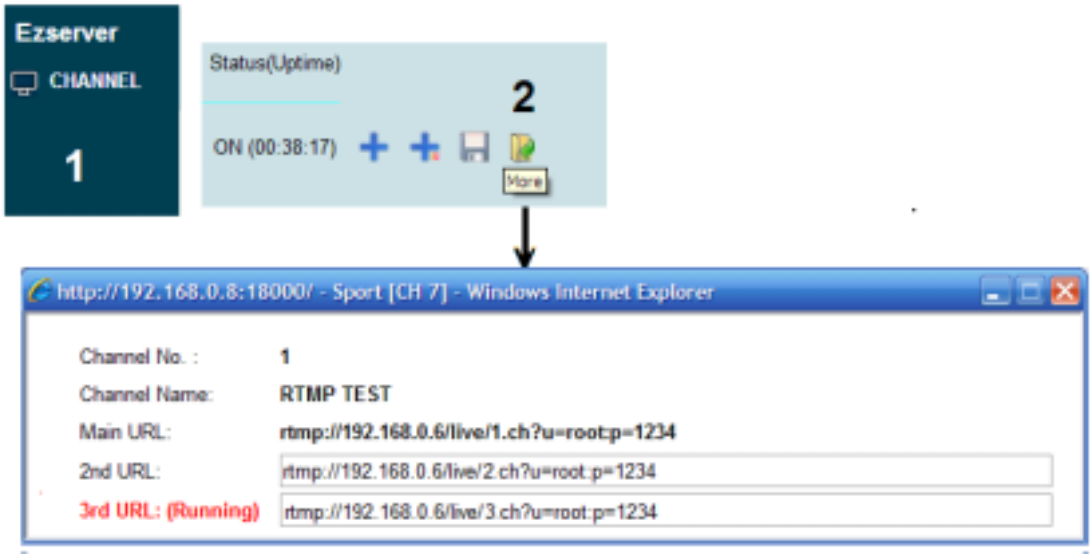
Step2**: Click "+" Button of a channel to add new channel.**



Step3**: Input Channel Name, input URL, Channel Icon Path Catalog and Type, then click "+" button.**

Add Channel backup source URLs

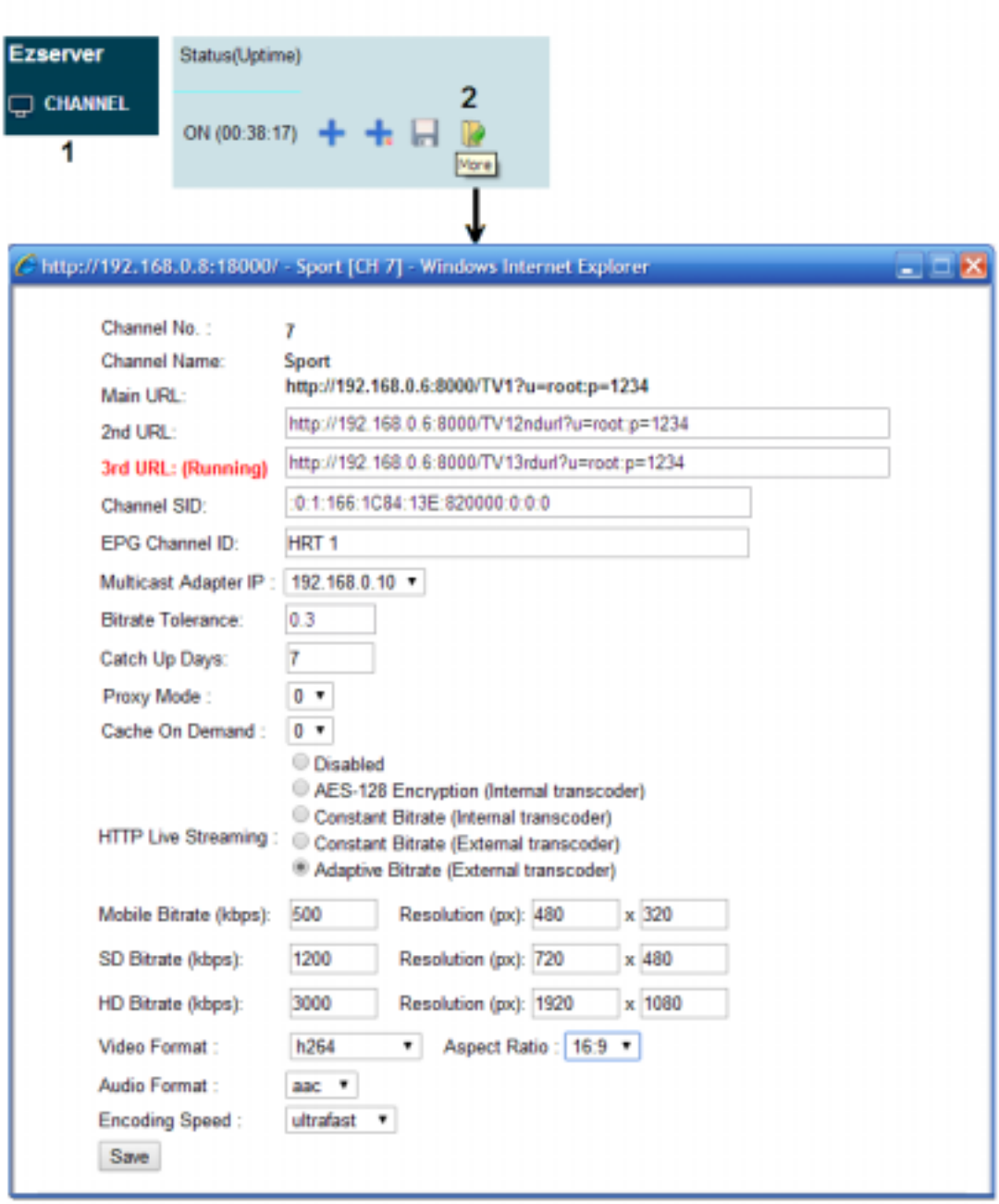
- Click Channel Button
- Click More Buttone of a channel
- Input URL into 2nd URL and 3rd URL



- Click Save Button

Channel extra setting

Extra setting includes Channel Backup URLs, Enigma SID for EPG, Bitrate Tolerance for video streaming, Channel Forward for bandwidth saving.



Extra setting includes Channel Backup URLs, Enigma SID for EPG, Bitrate Tolerance for video streaming, Channel Forward for bandwidth saving.

Note 1. 2nd URL and 3rd URL**: for channel main URL is not available.**

Note 2. Multicast Adapter IP**: Multicast Stream from multiple network adapters.**

Note 3. Channel SID**: for enigma EPG use.**

Note 4. EPG Channel ID**: When the channel name of panel is different with channel id of**

EPG, It is for mapping them.

Note 5. Bitrate Tolerance**: for video streaming performance of a channel, it is same as "Channel Streaming Bitrate Tolerance" of Setting Windows that is for all channels.**

Note 6. Catch Up Days**: days for channel recording. "**0**" is to disable recording.**

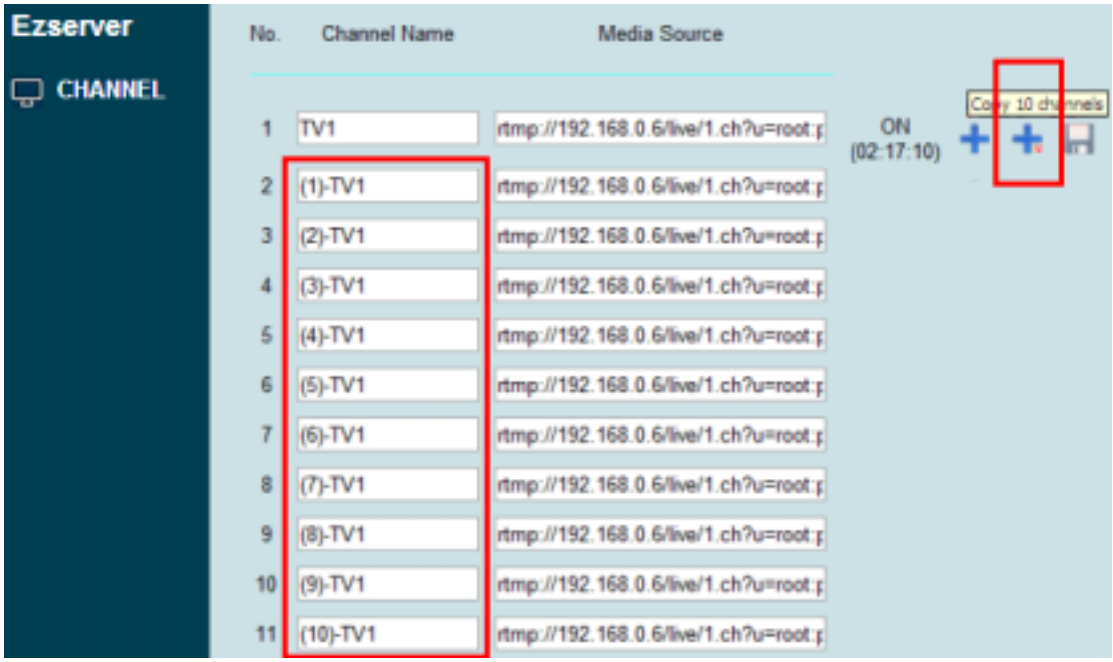
Note 7. Proxy mode**: The channel becomes a proxy server to forward the channel main url to player.**

Note 8. Caching on-demand**: if its value is 1, then when a player wants to watch a channel, ezserver checks the channel if is cached in memory. if the channel is cached, then ezserver streams the channel video from the cache to the player. If the channel is not cached, ezserver opens a connection to the input server and gets the video into cache memory, then ezserver streams the channel video from the cache to the player. If its value is 0, ezserver does not stop the connection of input server to get the video into cache memory.**

Note 9. HTTP Live Streaming**: Use DASH Transcoder.to provide adaptive bitrate streaming for H265/H264 video.**

Create multiple channels

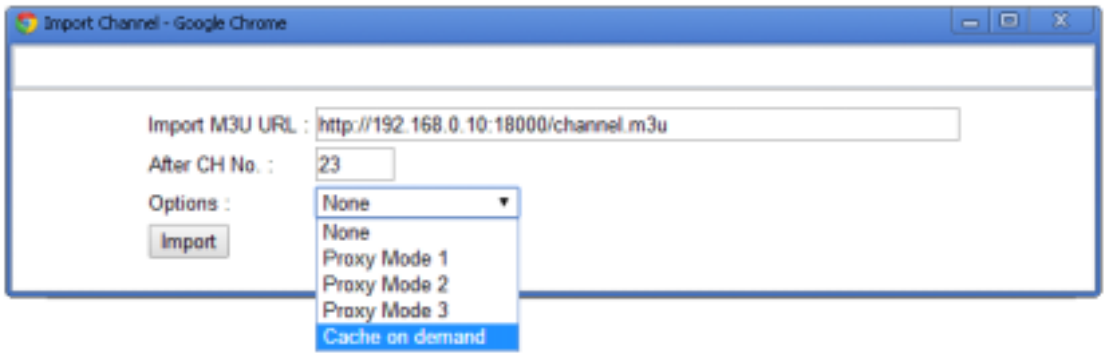
Use copy button to create 10 channels with the current channel information.



Import channel

Import channel list by m3u format into Ezserver, there are three ways, the 1st way is by IPTV Panel, the 2nd way is to upload channel.m3u to ezserver_ai folder, the 3rd way is by command.

- **By Panel:** Login Panel to Click import button, then input m3u location and select one option.



- **By channel.m3u:** Make a filename, called channel.m3u and upload it into ezserver_ai folder. Then start ezserver to convert it into channel_definition.xml. **channel.m3u files must be deleted after channel_definition.xml created**.
- **By command:** Convert m3u8 file into channel_definition.xml

Command Options**:**

Function:

Convert m3u file into Ezserver Channel database

Usage:

ezchconverter [-c] filename(m3u)

Options:

-c Convert m3u file to channel_definition.xml (Default)

Examples:

>ezchconverter 1.m3u ... Convert 1.m3u to channel_definition.xml

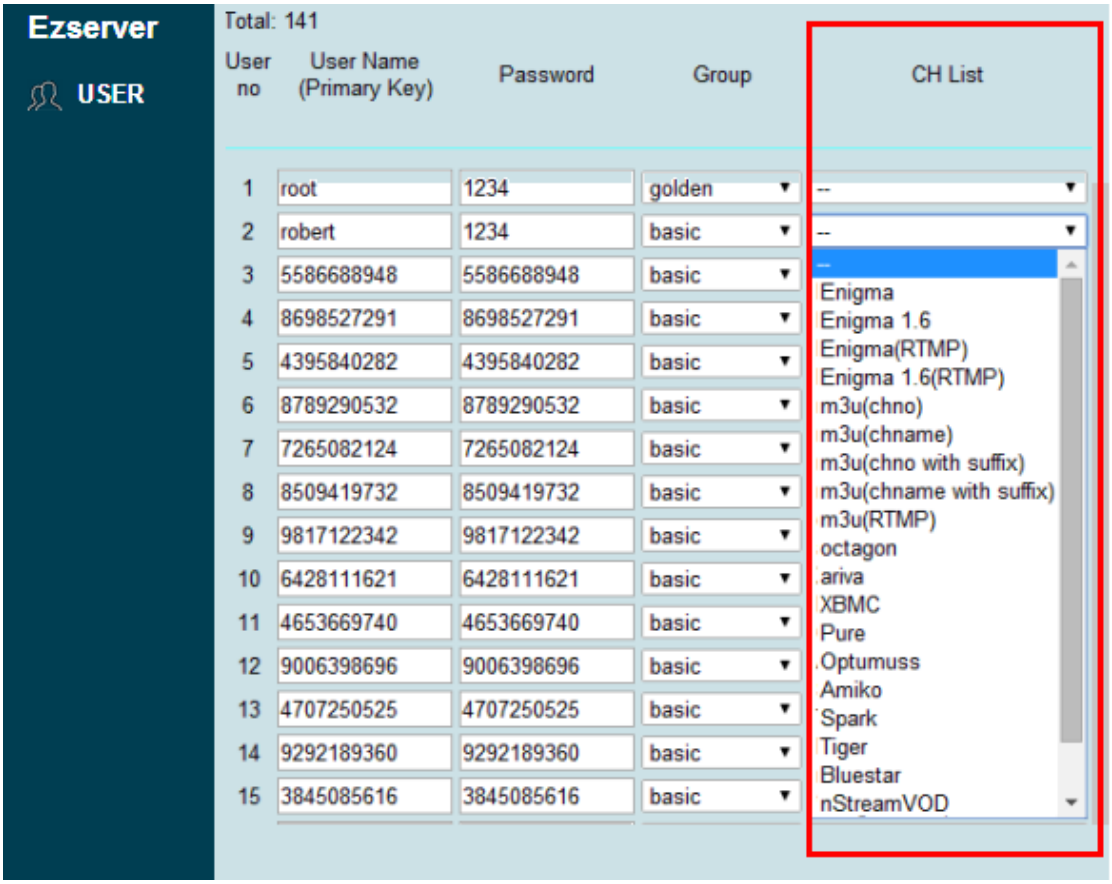
>ezchconverter -c 1.m3u ... Convert 1.m3u to channel_definition.xml

- **cd ezserver_ai /**
- **ls ezchconverter**
- **./ezchconverter 1.m3u**
- **cat channel_definition.xml**

Channel list download

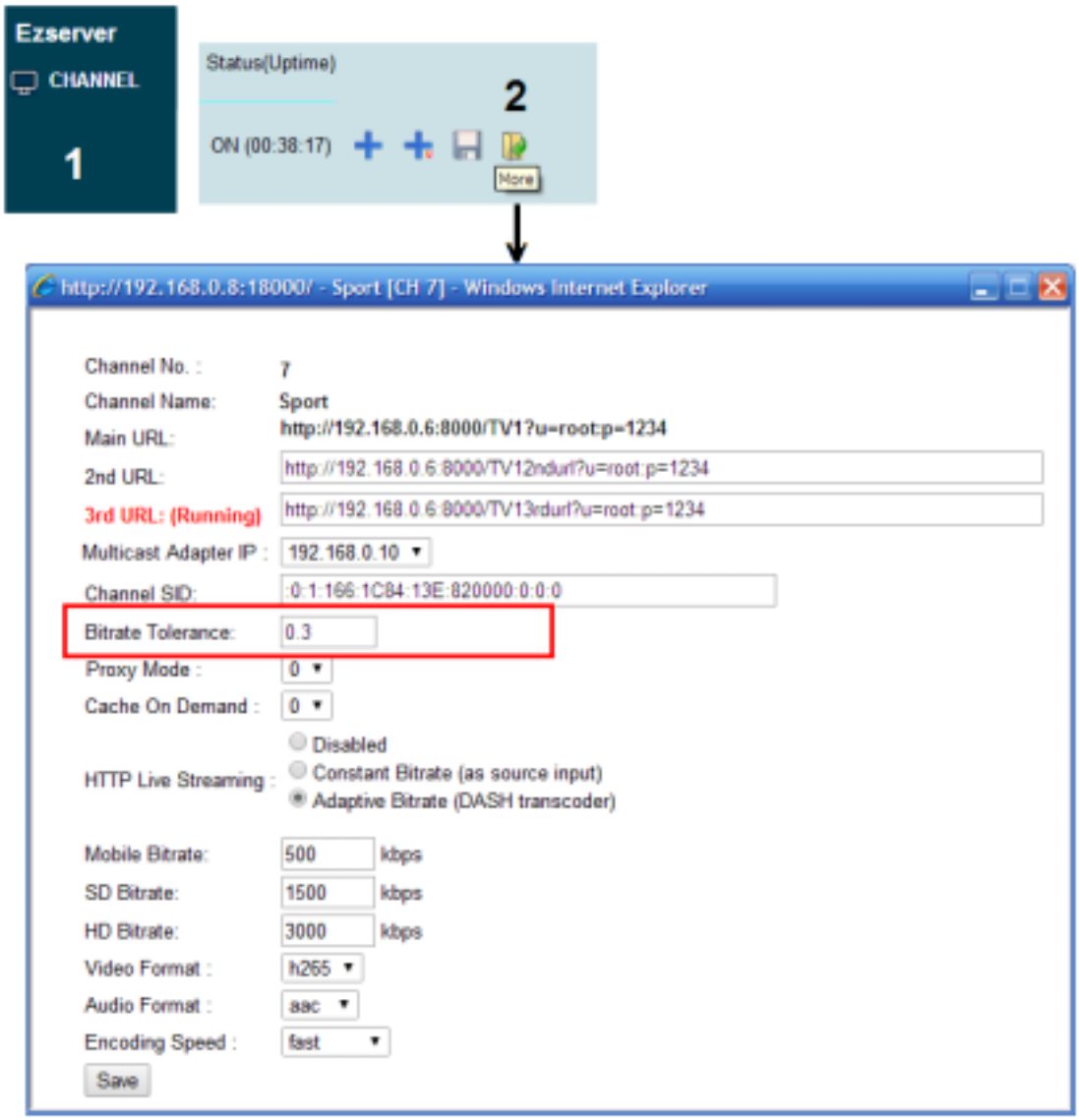
Download channel list, Script by each user.

- Select one option of CH List filed in User panel to download it to your PC.
- The options are including enigma, m3u8, m3u, XBMC, Enigma Script and MAC Address Script etc.



Streaming performance adjustment

If a player watches a channel freezing, it can be network performance, internet download bandwidth or higher video bitrate, administrator can adjust Bitrate Tolerance to enhance the video streaming speed as below:



Note 1: Bitrate Tolerance**: for video streaming performance of a channel, it is same as "Channel Streaming Bitrate Tolerance" of Panel Setting that is for all channels.**

Note 2: **Its value is between 0 and 0.999. (ex. 0.00: SD video, 0.999: HD 25Mbps)**

Movie

Menu Bar

Refresh	**Refresh checked movies**
Import	**Import Movie List from m3u list URL**
Delete	**Delete checked movies**
Search	**Search Movie Name**

Button

Add	**Add a new movie,**
Copy	**Copy 10 movies.**
Save	**Save movie definition.**
More	**More movie information**

Content

Movie No	**N/A**
Movie Name	**For player input url by name. Ex. http://192.18.0.8.1800/MOVIE1**

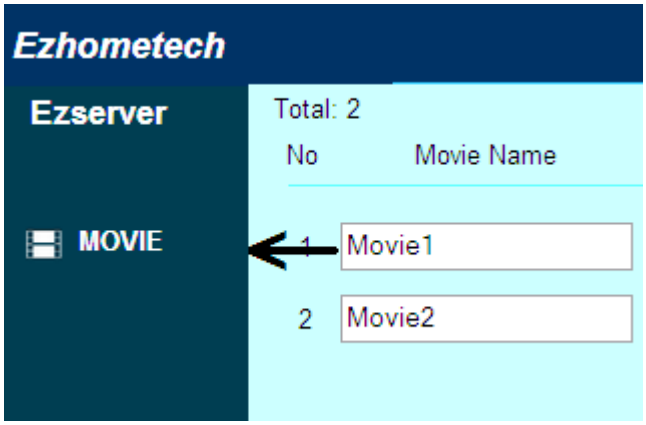
Media Source	**Local movies.**
	• **syntax : "file://path"**
	  • **file://middleware/videos/Sports/1.mp4**
	  • **file://middleware/videos/Kids/1.flv**
	  • **file://middleware/videos/Kids/1.ts**
	  • **file://middleware/videos/Kids/1.mov**
	Remote movies
	• **syntax : "http://url"**
	  • **http://192.168.0.6/films/1.mp4**
	  • **http://192.168.0.6/films/1.flv**
	  • **http://192.168.0.6/films/1.avi**

Icon Path	**The path of Movie icon for players**
Category	**The category for each movie.**
Duration	**The movie duration by min.**
Bitrate	**The movie bitrate by Kbps**
Status	**ON / OFF for the Input link.**

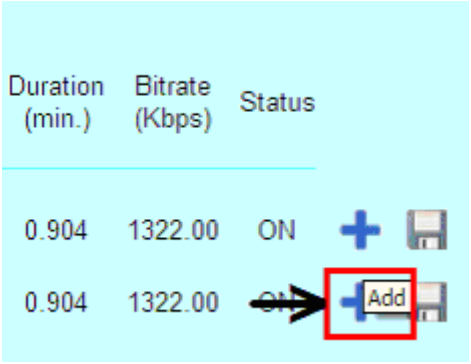
Add new movie

Follow the below steps to add new movie.

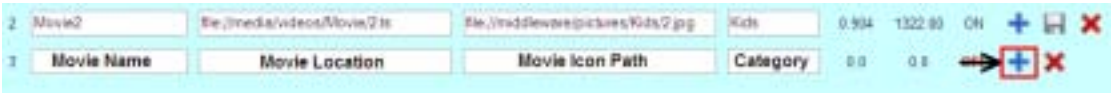
Step1: Click “Movie” Button.



Step2**: Click “+” Button of a movie to add new movie.**

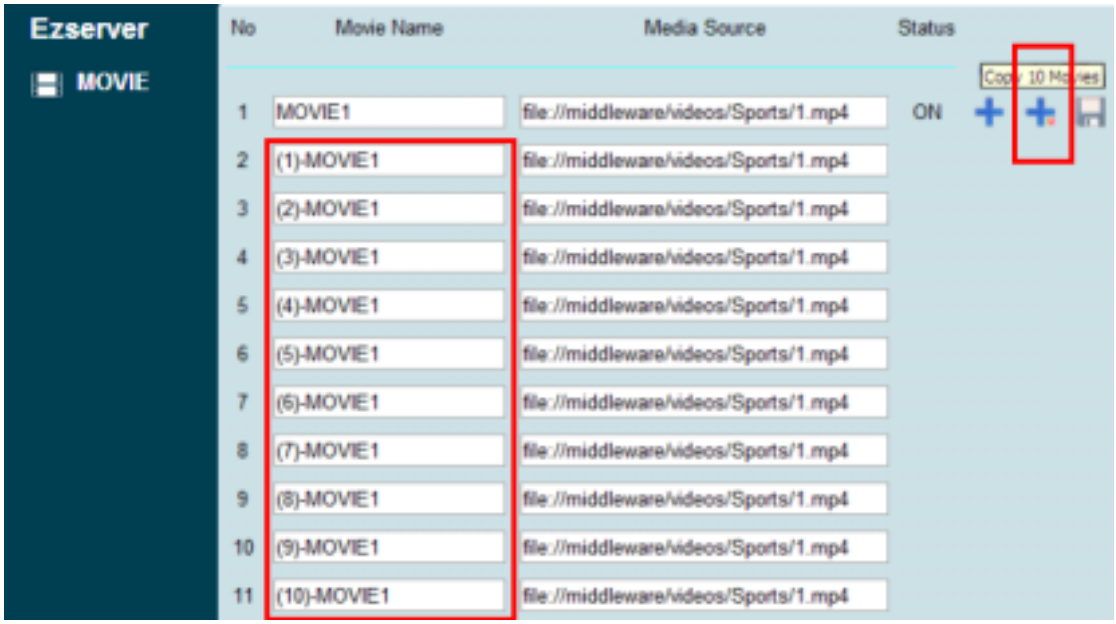


Step3: Input Channel Name, input URL, Channel Icon Path Catalog and Type, then click "+" button.



Create multiple movies

Use copy button to create 10 movies with the current movie information.



Import movie

By command

Convert m3u8 file into channel_definition.xml

Command Options**:**

Function:

Convert m3u file into Movie database

Usage:

ezchconverter [-m] filename(m3u)

Options:

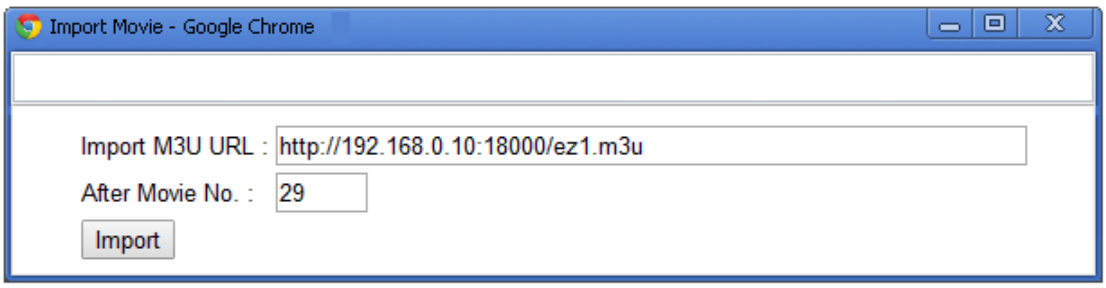
-m Convert m3u file to movie_definition.xml

Examples:

>ezchconverter -m 1.m3u ... Convert 1.m3u to movie_definition.xml

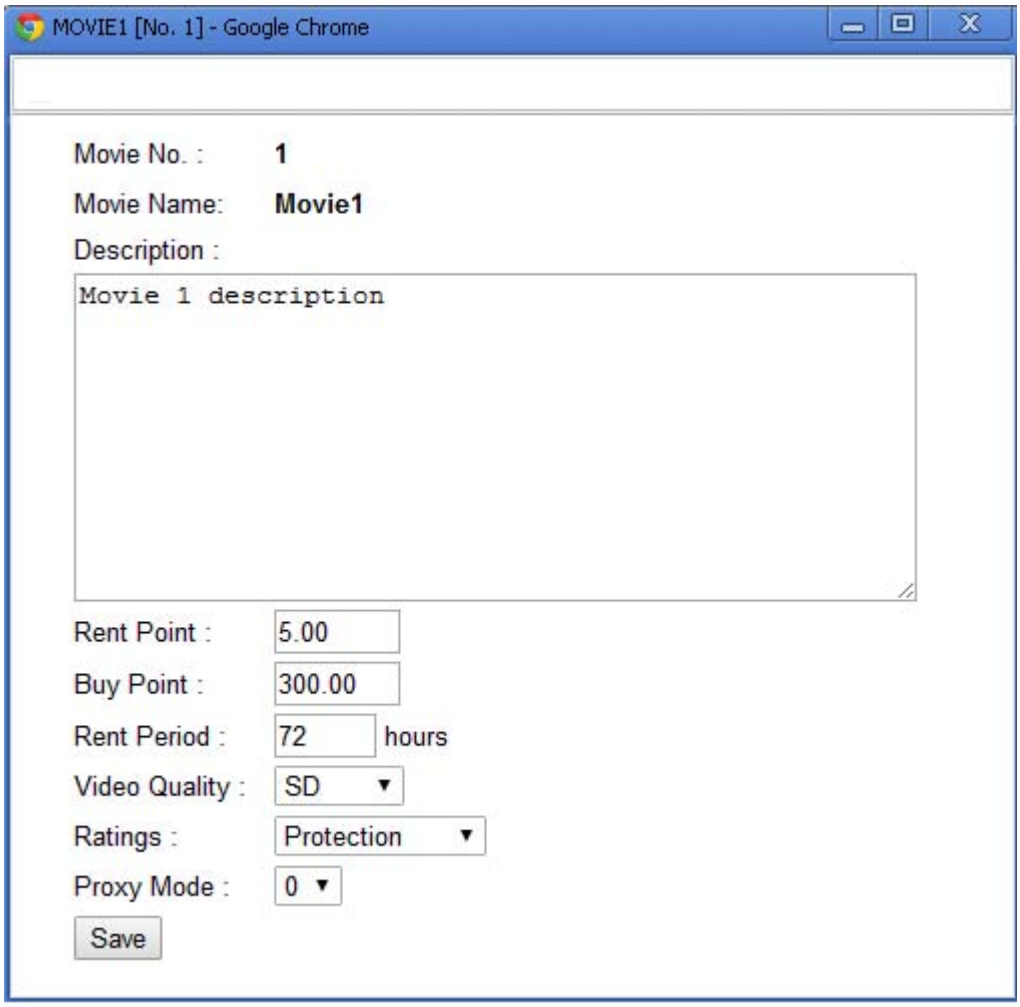
By Panel

Click import button


Import Movie - Google Chrome
Import M3U URL :
http://192.168.0.10:18000/ez1.m3u
After Movie No. :
29
Import

Movie extra setting

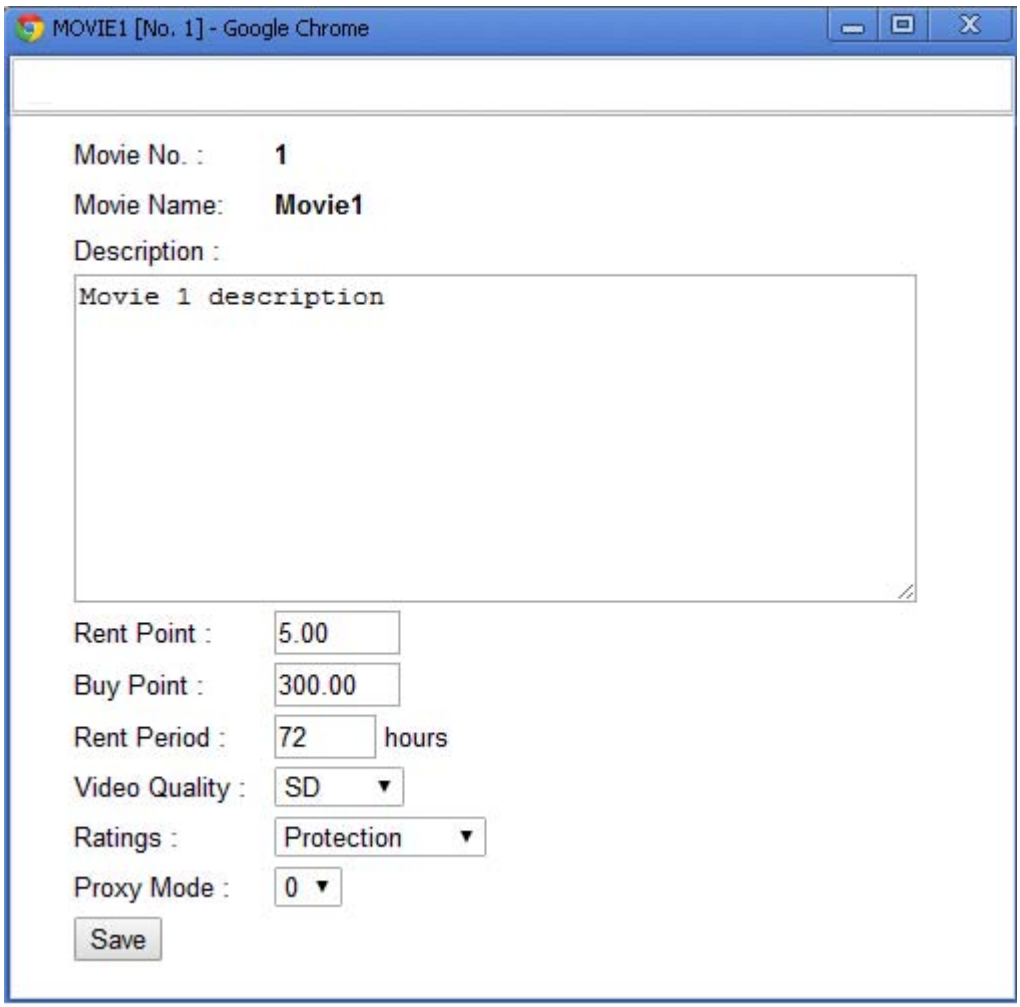
Click more button to get the more setting including Description, Rent Point, Buy Point, Rent Period, Rating.



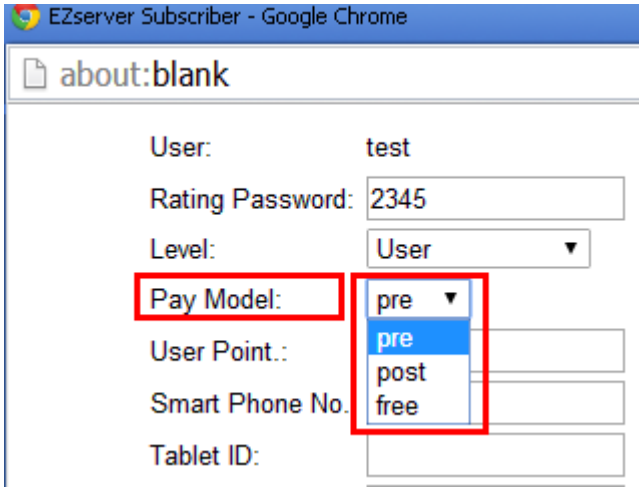
Pay Per View

Set Movie Point

Click the more button of Movie Panel to set Rent Point**,** Buy Point**,** Rent Period**, and** Rating**.**

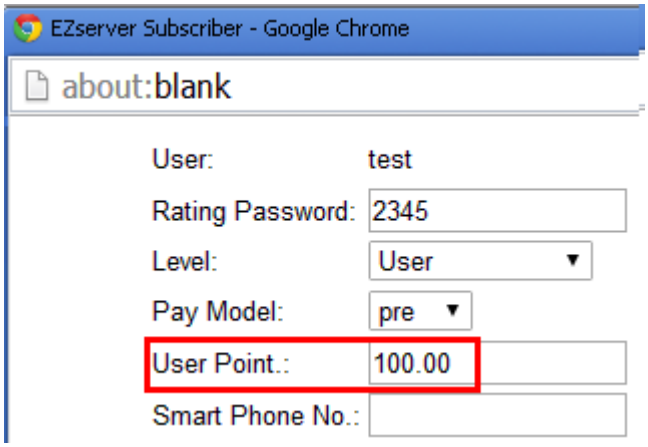


- Set User Pay Mode
  - pre: **Prepaid mode is for internet video service.**
  - post: **Post-paid mode is special for Hotel PPV.**
  - free: **Free mode is for monthly subscription or free service.**

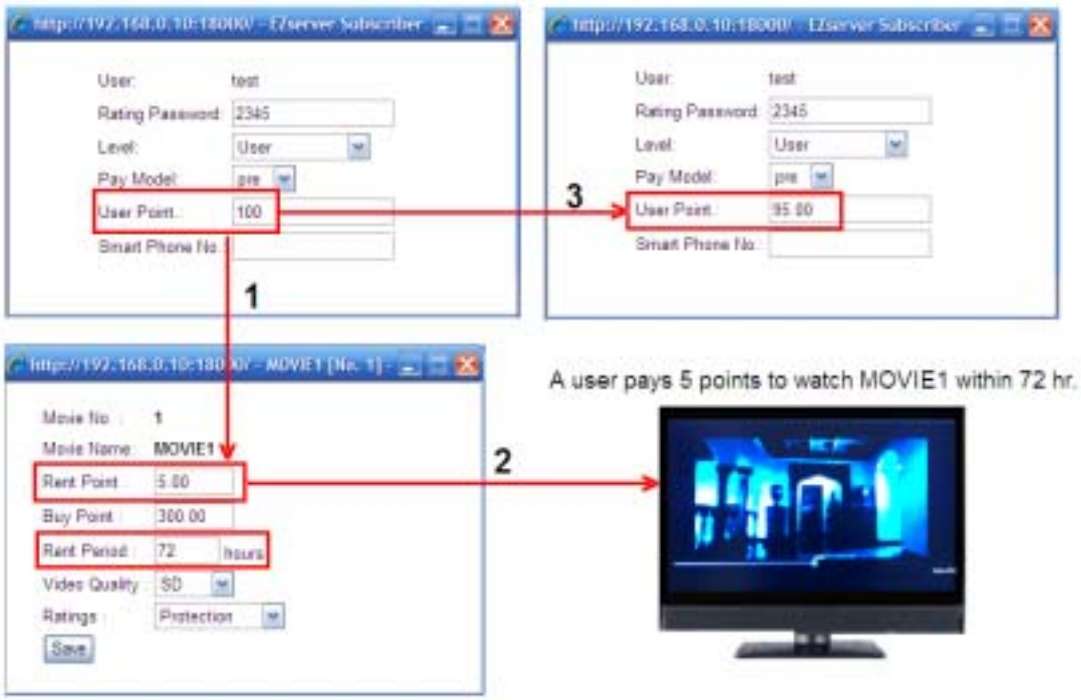

EZserver Subscriber - Google Chrome
about:blank
User:
test
Rating Password:
2345
Level:
User
Pay Model:
pre
pre
post
free
User Point.:
Smart Phone No.
Tablet ID:

Set User Point

- **For Prepaid mode, Administrator needs to set the** User Point **first. Once the user rents or buys a move, the User Point will be subtracted by the movie point.**
- **For Post-paid mode, Administrator needs to set the** User Point **to** zero **first. Once the user watches a move, the User Point will be added by the movie point.**
- **For Free mode, the User Point is disabled.**



PPV Flow



PPV API

- createtokenbased64
- destroytoken
- check_user_ppv
- charge_user_ppv
- get_movie_ratings
- check_user_ratings_password

Movie subtitle

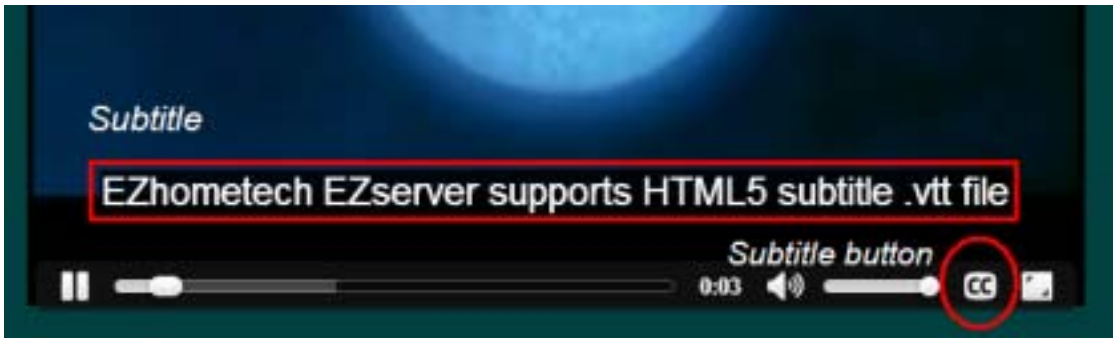
Ezserver supports HTML5 video tag for subtitle WebVTT. It suppors mp4 file with subtitle. A movie needs a mp4 file and vtt file with the same filename in the same folder.

Ex.

When a movie Media Source is file://middleware/videos/Sports/1.mp4, then need to put a subtitle file in ezserver_enterprise /middleware/videos/Sports/1.vtt

Enable Subtitle Steps:

- Open a browser. (Chrome or IE10)
- Input http://ezserverip:17000/radsplayer/index.htm in URL field
- Login by “test” with password “1234”
- Play the movie and click “CC” to turn on/off the subtitle



User

Each user can be used by User/Password mode or Top-up Card mode. User/Password mode has at least 4 fields that include user name, password, belonged group, expired time for Channels, Top-up Card mode has at least 3 fields that include PIN No., belonged group, expired time for Channels,and 2 more fileds (Moive Paid Model, Points) for Video on Demand.

Each subscriber needs to be belonged to one group, so Ezserver Administrator has to define groups for users first.

Menu Bar

Cut / Paste	**Cut / Paste checked users**
Cleanup	**Cleanup Expired Users**
Expired	**Show Expired Users**
Delete	**Delete checked users**
Search	**Search User name, First Name, Last Name or email ID.**

Button

Add	**Add a new user,**
Add Multiple Users	**Create multiple users with 10-digital-no username and password.**
Save	**Save user definition.**
More	**Refer the below “**User More window**”.**

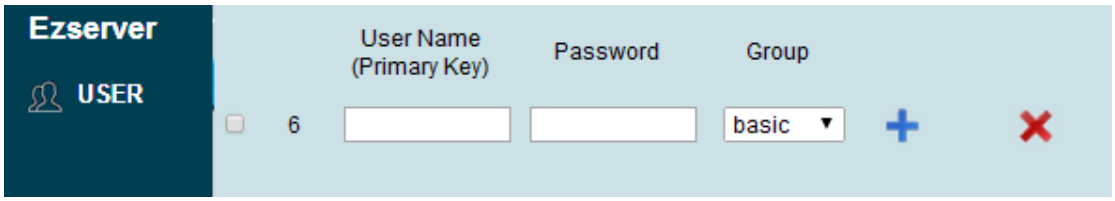
Content

User Name / PIN No.	**User Name for User/Password mode, PIN No. for Top-up Card**
Password	**Only for User/Password mode**
Group	**Defined in Group Management window**
CH List	**Create Ch list for Enigma, M3u8, XBMC, etc.**
Movie List	**Create Movie list for Enigam and M3U.**
Expired Time / Paid Days	**Date Format:** MM/DD/YYYY**. Ex. 12/31/2014** **Date Format:** xxxx**. Ex. 180 means 180 days**
IP	**Predefined allowed IP for each user.**
MAC ID	**Predefined allowed MAC Address for each user.**
Command	**Add, Save, Del, More**

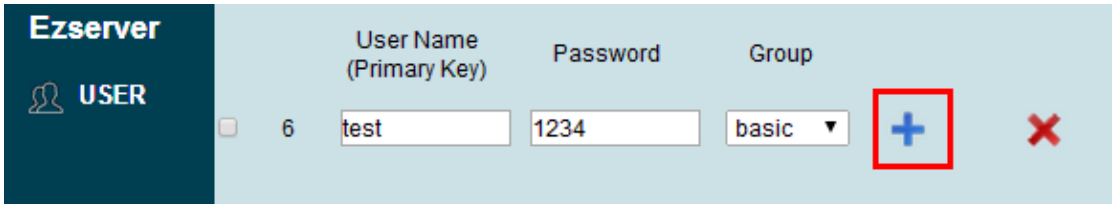
Create new user

- Click User button and click + button.

- **Panel will show the empty user fields**

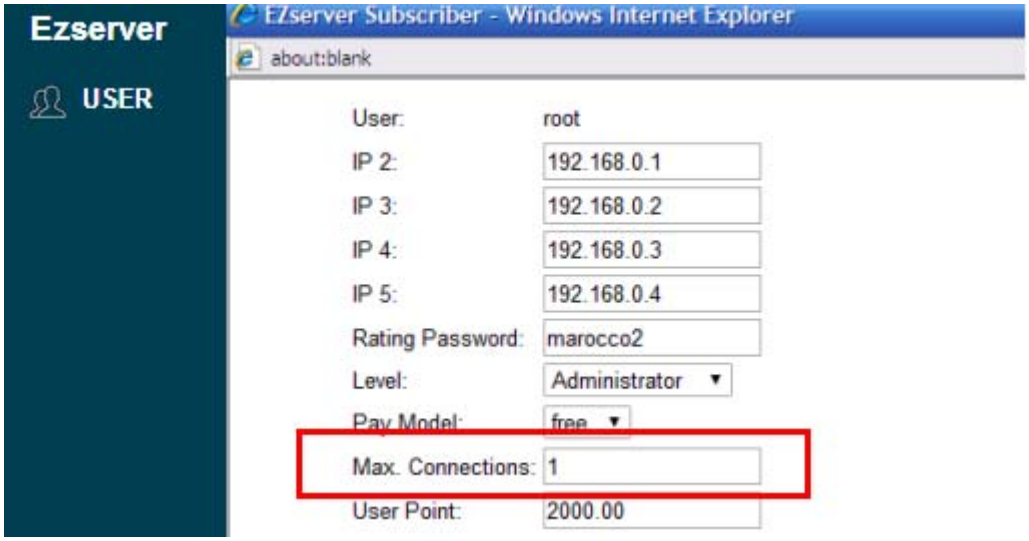


- **Input user id, password and etc., then click + button to save it**



Max. concurrent connections

Administrator can click User button and select More icon to set user max. connections as below:



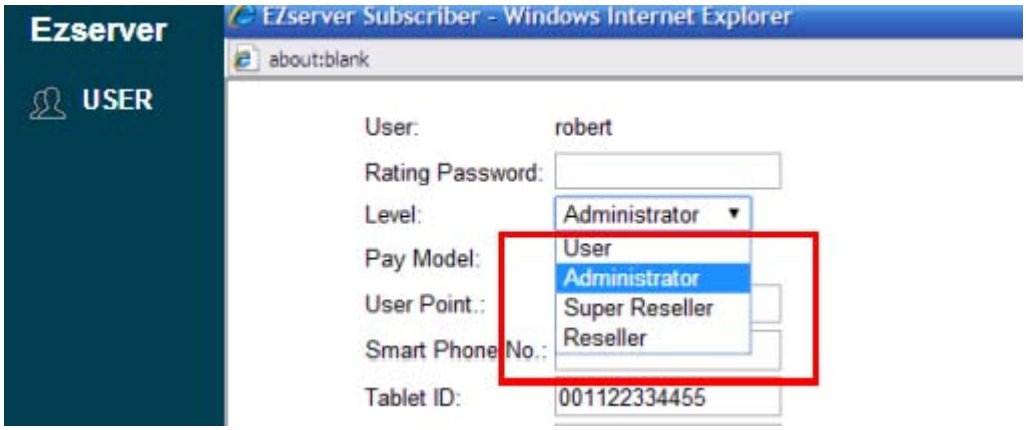
Note: Enable/Disable user First in First out connection:

Add **user_connection_fifo=0/1** in ezserver_config.txt and restart ezserver.

- **user_connection_fifo=1** means to **stop the previous connection** and **start new connectrion**. (**Default**).
- **user_connection_fifo=0** means to **reject start new connectrion** over Max connection no.

User level

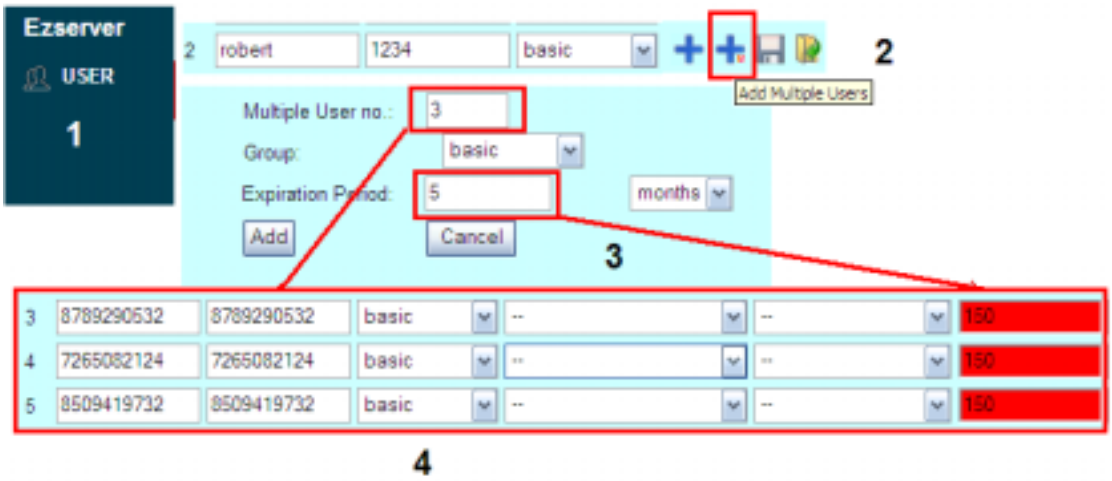
User Level has 4 levels including Administrator, Supper Reseller, Reseller and User. Administrator can click User button and select More icon to set user level as below:



- Administrator can login Ezserver Panel to configure Ezserver via a browser.
- Super Reseller can add resellers and users
- Reseller can add users
- Users can watch channels and movies

Active Code Mode

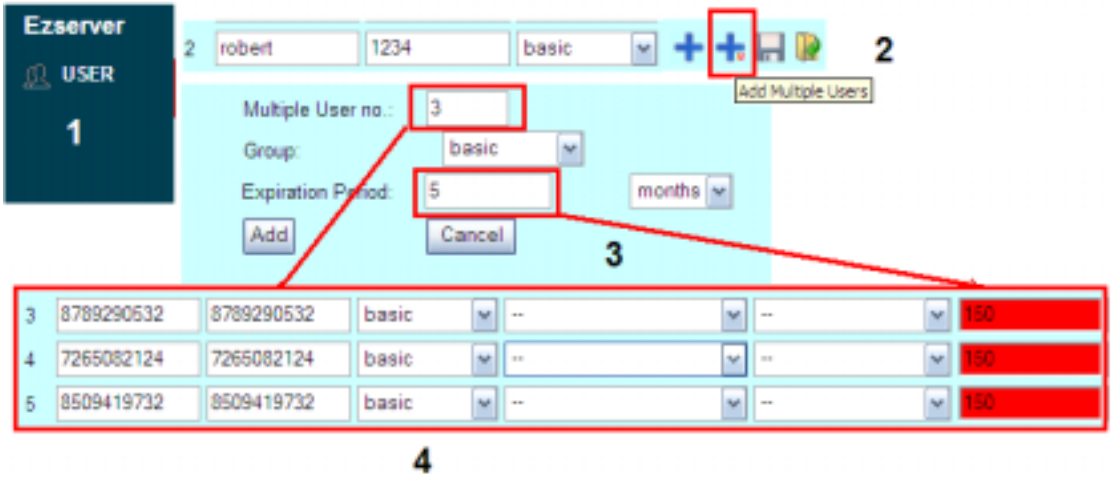
- Set user_authorization=2 and active_code_no=14 in ezserver_config.txt to create 14- digital-no active code in username.
- Start Ezserver.
- Click User button and “Add Multiple Users” button to create new users with random username, group and expiration days.



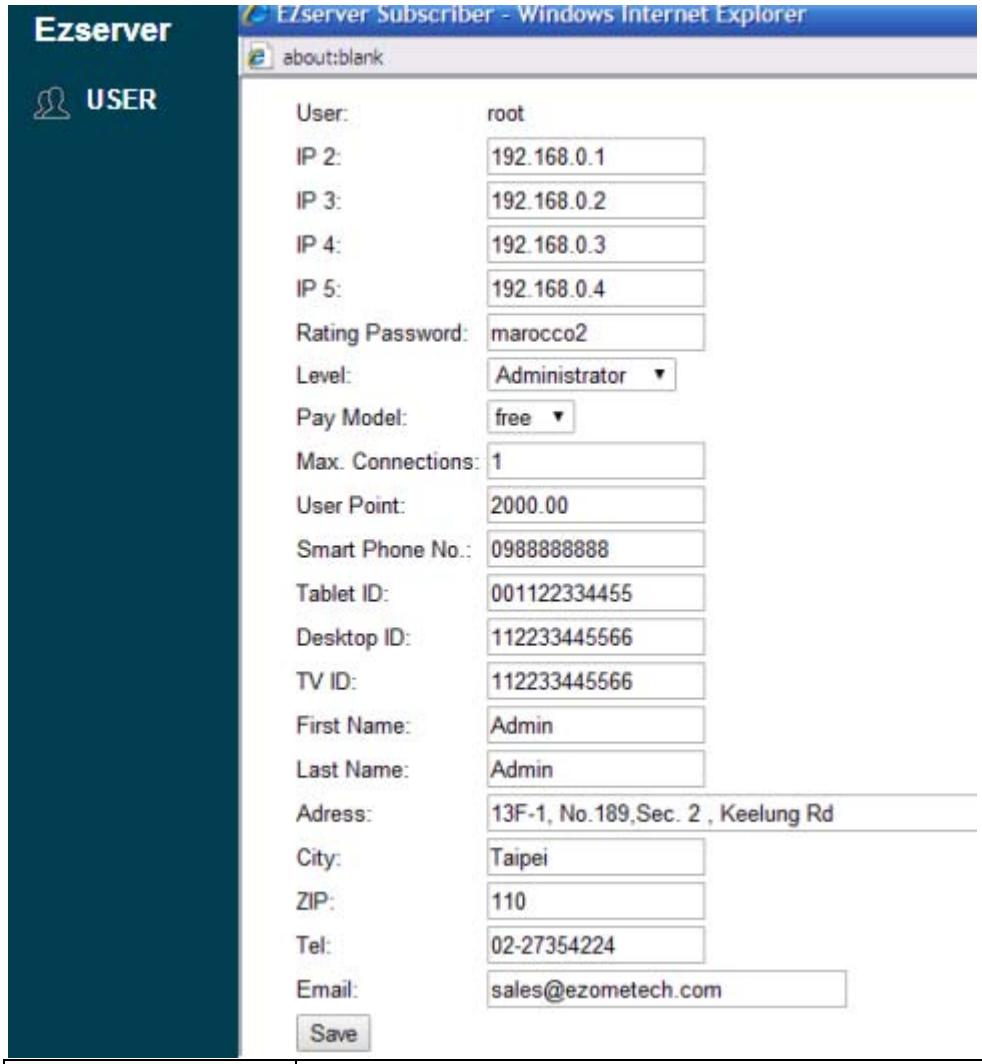
User Name	Active code
Group	Defined in Group Management window
Paid Days	Date Format: xxxx. Ex. 150 means 150 days from the first watching.

Add multiple users

Use “Add Multiple Users” button to create new users with 10-digital-no username, password, group and expiration days.



User extra setting



User Name / PIN No.	**User Name is for User/Password mode, PIN No. is for Top-up Card**
IP2, IP3, IP4, IP5	**Defined allowed IP for the user**
Rating Password	**Password for Rating Movie**
Level	**User Level has 5 levels including Administrator, Supper Reseller, Reseller, User and Restreamer.** • Administrator **can login Ezserver Panel to configure Ezserver via a browser.** And you need to set allowed folders for Administrator, more detail in HTML Access Protection section. • Super Reseller **can add resellers and users** • Reseller **can add users** • Users **can watch channels and movies**

	• Restreamer **can restream channels without "Alter Player Duration" limitation**
Pay Model	**Has 3 model: Free, Pre-Paid, Post-Paid for Points**
ISP Lock	**Limit the user connection from the same ISP**
Max. Connection	**Max. concurrent connections**
User Point	**Pay Per View Point**
Command	**Save**

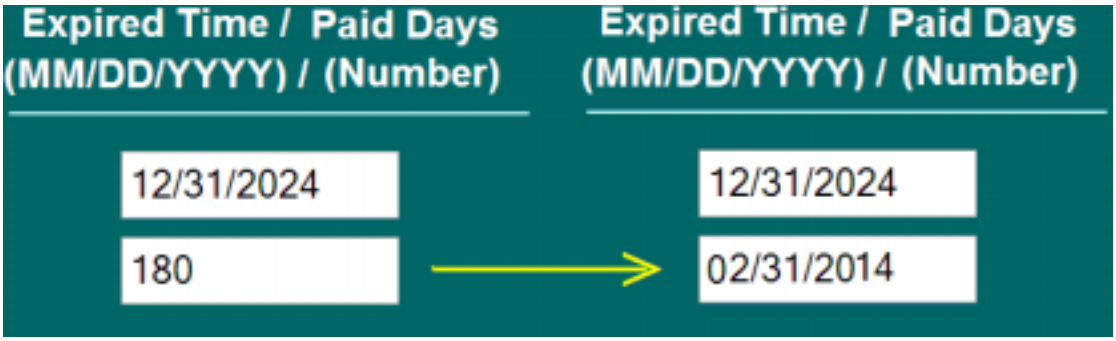
User-Password mode and Top-up Card mode

Each subscriber can be used by User-Password mode or Top-up Card mode. User-Password mode has at least 4 fileds that include user name, password, belonged group, expired time for Channels, Top-up Card mode has at least 3 fileds that include PIN No., belonged group, expired time for Channels,and 2 more fileds (Moive Paid Model, Points) for Video on Demand.

Each subscriber needs to be belonged to one group, so Ezserver Administrator has to define groups for subscribers first.

User Name / PIN No.	User Name is for User/Password mode, PIN No. is for Top-up Card
Password	Only for User/Password mode
Group	Defined in Group Management window
Expired Time / Paid Days	Date Format: MM/DD/YYYY. ex. 12/31/2014 Date Format: xxxx. ex. 180 means 180 days
IP	Predefined allowed IP for each user.
MAC ID	Predefined allowed MAC Address for each user
Command	Save, Del, More

Expired Time / Paid Days field has two type, one is fixed expired time as 12/31/2014, the other is to define the available days as 180, it means when a subscriber starts to play the channel or video, then he has 180 available days. And Ezserver will change this filed to fixed exipred time as below example:



ex. If the subscriber has 180 available days and login on 09/01/2013, then the expired time filed will be changed into 02/31/2014.

For User-Password mode, Ezserver administrator needs to set user_authorization=1 of ezserver_config.txt. For Top-up Card mode, Ezserver administrator needs to set user_authorization=2.

User-Password mode:

```
bitrate_constant=0
system_log=0
user_authorization=1
```

Top-up Card mode

```
bitrate_constant=0
system_log=0
user_authorization=2
```

User-Free mode

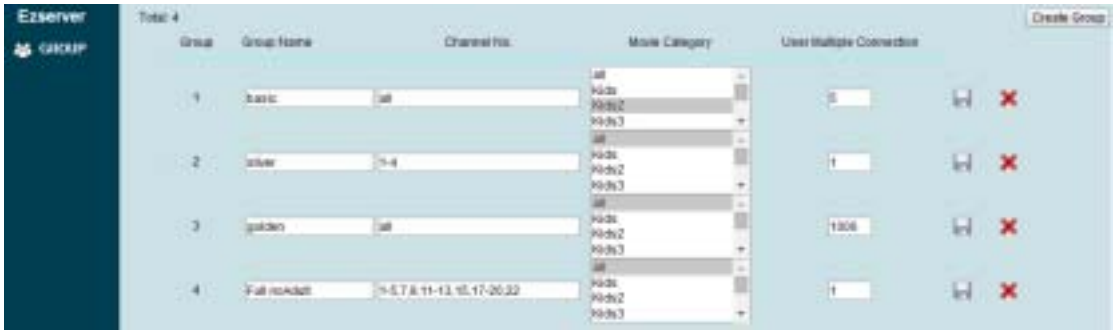
This mode does not have any protection for output links. For example, the URL is as http://192.168.0.10:8000/1.ch without u=xxx and p=xxx.

- set user_authorization=0 in ezserver_config.txt
- ./shutdown.sh
- ./start.sh

```
bitrate_constant=0
system_log=0
user_authorization=0
```

Group

Group management can define allowed channels, allowed movie categories and multiple connection. For the below example, “golden” group can play all channels, but “sliver” group can only play ch1 to ch4. It also defines the “golden” group can has 1000 connections with the same user on different ip and “sliver” group only has one connection for one user at same time.



Menu

Total	**The total no of Group**

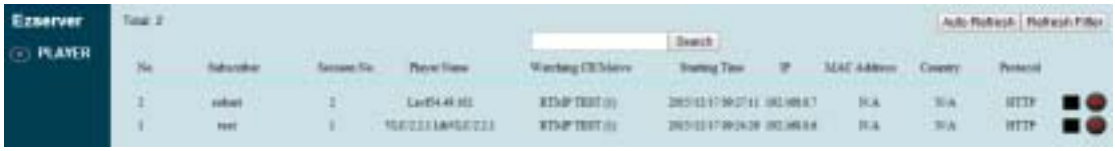
Button

Create Group	**Create new group**

Content

Group	**N/A**
Group Name	**N/A**
Channel No.	**Define allowed channel no. for the group. The keyword “all” is for all channels.** **Ex. 1,2,3 means the group users can watch ch1, ch2 and ch3** **Ex. 1-3,5-7,15 means the group users can watch ch1, ch2 , ch3, ch5, ch6, ch7 and ch15** **Ex. all means the group users can watch all channels.**
Movie Category	**Define allowed movie categories. "all" is for all movie categories. Hold down the** Ctrl button **to select multiple options.**
User Multiple Connection	**Define the max concurrent connection for a user in the group**

Player



Menu Bar

Total	**The total no of active player**
Auto Query	**Automatically Query active players per 10 seconds.**
Reload Filter	**Reload the information of Filter Addons such as Player Filter, IP Blocker, Country Filter and MAC ID Blocker.**

Button

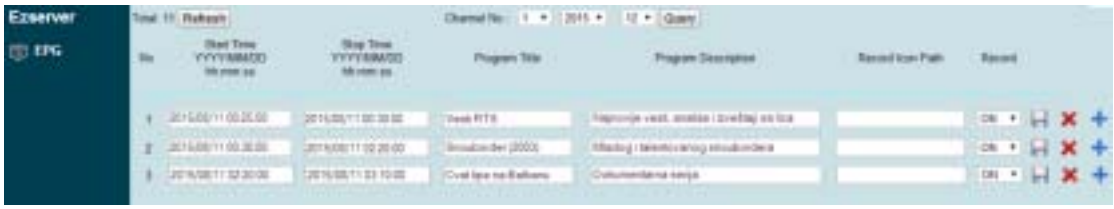
Stop	**Stop the player**
Block	**Stop the player and block it into blacklist**

Content

Subscriber Name	**N/A**
Player Name	**User-Agent Name**
Watching CH	**The Channel Name and No. watching by each user**
Stating Time	**Starting Video Streaming Time**
IP	**Player IP**
MAC Address	**MAC Address or N/A**
Country Name	**Player Location**
Protocol	**Video Streaming Protocol**

- Country Name has 3 types as below in users/user_ip_country.csv
  - **Country_Type=**1 **: 2 Letter Abbreviations.**
  - **Country_Type=**2**: 3 Letter Abbreviations.**
  - **Country_Type=**3**: Full County Name**

EPG



Menu

Total Program No.	**The total no of Program in a channel**
Channel No.	**N/A**
Year	**N/A**
Month	**N/A**
Query	**Query the EPG information of the Channel**

Button

Save	**Save Program definition**
Add	**Add a new program**
Del	**Delete a program**

EPG

No	**Program No.**
Start Time	**Program Start Time: Format: YYYY/MM/DD hh:mm:ss**
Stop Time	**Program Stop Time: Format: YYYY/MM/DD hh:mm:ss**
Program Title	**The category for each channel**
Program Description	**N/A**
Record Icon Path	**Record Video Icon Location**
Record	**Vaule=ON/OFF, ON means Ezserver will record the live channel from Start Time to Stop Time**

Note: There are two ways to generate Channel EPG into Panel. One is from MPEG TS stream with EPG packets, The other way is from XMLTV URL. Please check more in Automatic EPG Generation.

EPG Automatic Generation

There are two ways to generate Channel EPG into Panel. One is from MPEG TS stream with EPG packets. The other way is from XMLTV URL.

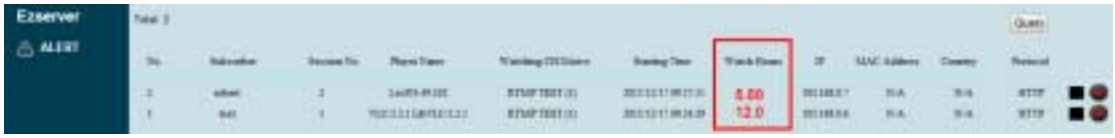
A. From MPEG TS stream

Add MPEG TS URL with EPG packets into panel channel list, then Ezserver automatcially gets EPG from the streams and add them into EPG Panel.

B. From XMLTV URL

Click Setting button and input XMLTV URL, then Ezserver automatically gets EPG from the streams and add them into EPG Panel.

Alert Player



Menu

Total	**The total no of active player**
Query	**Query active players**

Button

Stop	**Stop the player**
Block	**Stop the player and block it into blacklist**

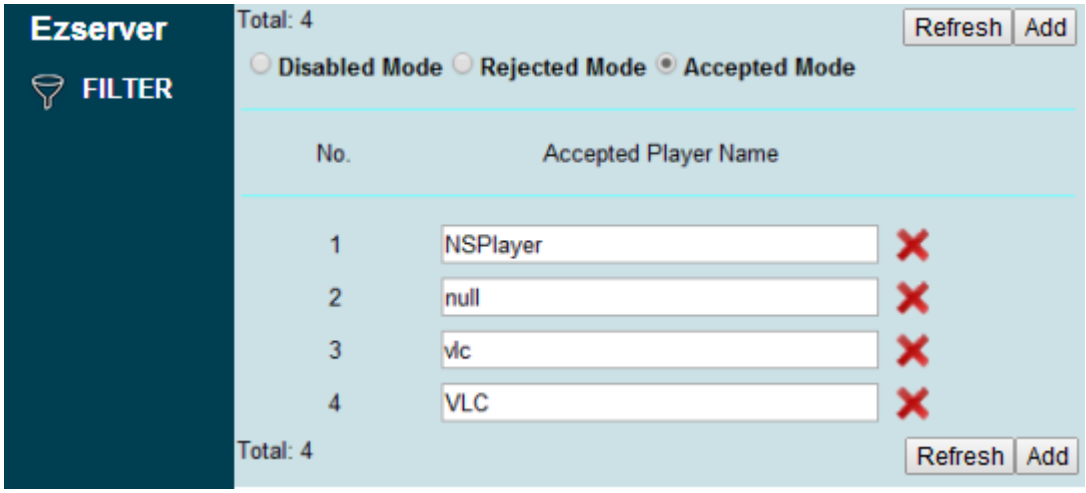
Content

Subscriber Name	**N/A**
Player Name	**User-Agent Name**
Watching CH	**The Channel Name and No. watching by each user**
Stating Time	**Starting Video Streaming Time**
Watch Hours	**Player watching hours**
IP	**Player IP**
MAC Address	**MAC Address or N/A**
Country Name	**Player Location**
Protocol	**Video Streaming Protocol**

- Country Name has 3 types as below in users/user_ip_country.csv
  - **Country_Type=**1 **: 2 Letter Abbreviations.**
  - **Country_Type=**2**: 3 Letter Abbreviations.**
  - **Country_Type=**3**: Full County Name**
- To block and stop players over Watching Hours, add alert_player_blacklist option in ezserver_config.txt and restart ezsever.
  - alert_player_blacklist=1 : ezserver disconnects the player and blocks its IP.
  - alert_player_blacklist=2: ezserver just disconnects the player, not to block its IP.
  - If the user level is "Restreamer", ezserver ignores this option.

Player Filter

Player Filter is to filter all players to reject or allow to access video from Ezserver. Rejected player and accepted player is exclusive.



Menu

Total No	**The total no of Player Filter Name**
Refresh	**Refresh Player Filter List**
Mode	**Disabled / Rejected / Accepted**

Button

Del	**Delete a Player Filter Name**

Content

Accepted/Rejected Player Name	**Player Filter Name**

Mac Address

MAC Address is to filter all players by MAC address to reject or allow them to access video from Ezserver.

Menu

Total No	**The total no of accepted MAC Address**
Refresh	**Refresh MAC Address List**
Mode	**Disabled / Accepted**

Button

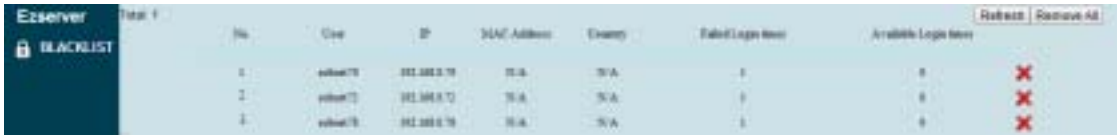
Del	**Delete a MAC Address**

Content

Accepted MAC Address	• **Player MAC Address sent by Sample player** • **Format:** aabbccddeeff • **Byte No.:** 12

Blacklist

Ezserver will automatically detects illegal connections and lock the IP into Blacklist.



Menu

Total Blacklist No	**The total no of Locked IP**
Refresh	**Refresh Locked IP**
Remove All	**Remove all Locked Ips.**

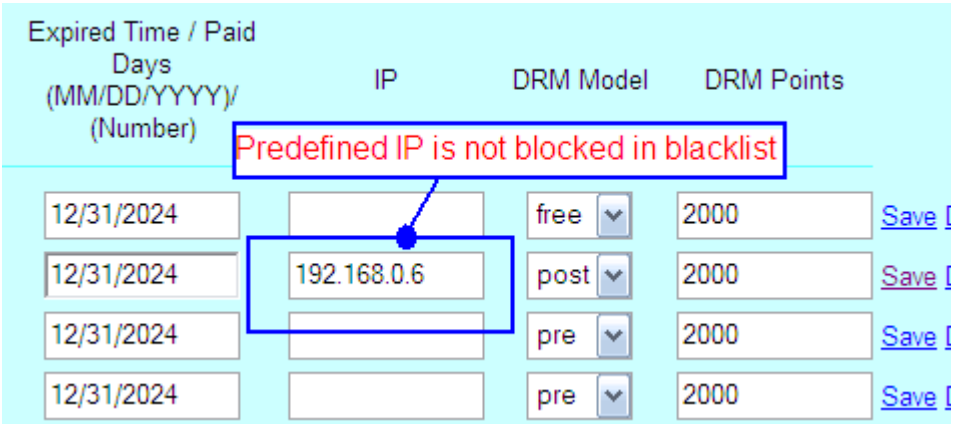
Button

Remove	**Remove the Locked IP.**

Content

IP	**IPv4**
MAC Address	**MAC Address or N/A**
Country	**IP Location**
Failed Login Times	**Attempted ezserver times**
Available Login Times	**Availalble login times (The default value is 10)**
Command	**Remove**

- Note: **If a user IP is defined in user panel, then the IP does not appear in the blacklsit.**



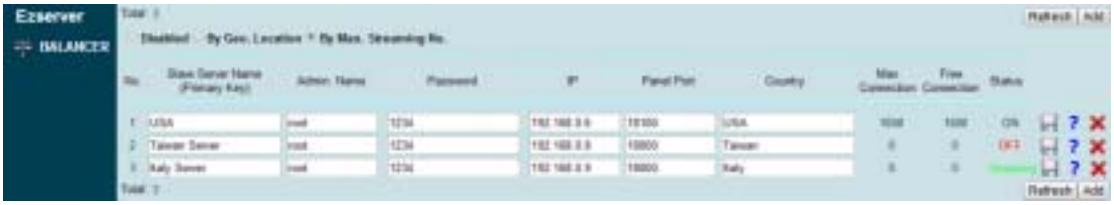
Balancer

Load Balancer can redirect the player request by Geo. Location or Max. Streaming No. of the server to slave servers.

- For Geo. Location, all players connect one master Ezserver, then Ezserver will check the player location to redirect the request to the nearest slave server.
- For max. streaming connections, when the connections are equal to max. streaming no. Ezserver will redirect the following requests to the slave server with the lowest load.
- Max. Streaming No. of an Slave Server is defined in Setting: 11. Max Streaming No

It also supports distributed users and channels.

- Users can be distributed in different User Databases and a user can connect one of distributed Ezservers to play the video. The way can reduce the redundancy of subscribers.
- Channels can be distributed in different servers. The way can reduce the upload bandwidth.



Menu

Total No	The total no of Servers
Query_All	Query the balancer List
Mode	Disabled / By Geo. Location / By Max. Streaming No. • By Geo. Location depends on Player Location to redirect it to Slave Server. • By Max. Streaming No. depends on the Max Streaming Limitation to provide the streaming or redirect it to other slave servers.

Button

Save	Save Slave Server Information.
Query	Get the latest Information of a Salve server.
Del	Delete Salve Server

Content

Slave Server Name	Unique Key for an Slave Server
Admin. Name	“root” user of an Slave Server
Password	Password of admin user of an Slave Server
IP	Slave Server IPv4
Panel Port	Slave Server Panel Port
Max Connection	Max. Streaming No. of an Slave Server
Free Connection	Available Connection No. of an Slave Server
Status	ON/Checking/OFF

Setting

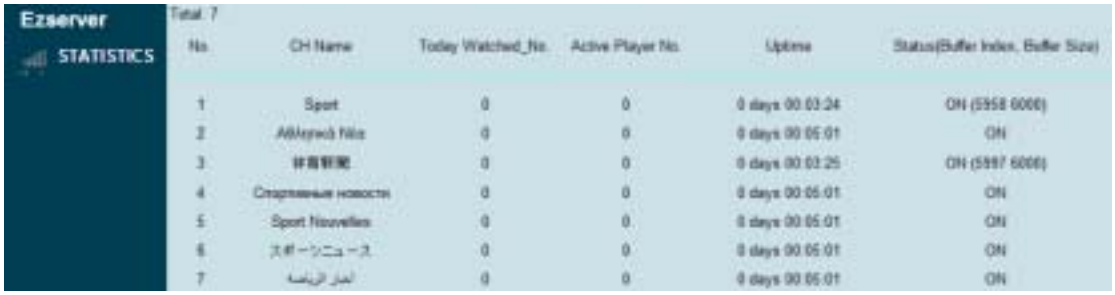
Content

Unicast Streaming Setting	
Panel port	o Web Panel Port for Ezserver System Management. o The default value is 18000.
API port	o Application Program Interface Port for integration via REST API. o The default value is 17000
HTTP port	o HTTP video streaming about IPTV/OTT/VOD o The default value is 8000.
RTMP port	o RTMP Live Encoder and Video Streaming. o The default value is 1935 o The value = 0 is to disable service
RTSP port	o RTSP video streaming about IPTV/OTT/VOD. o The default value is 5544 o The value = 0 is to disable service

Multicasting Streaming Setting	
Multicast IP/Port	o Multicast IP is 0.0.0.0 that means Ezserver stop broadcast channels to LAN. o Multicast IP is 224.1.1.1 for Multicast IP and 9001 for Multicast Port, then Ezserver will broadcast all channels to 224.1.1.1~224.1.1.x : 9001.
Channel Setting	
Channel Input Buffer No.	o It is for channel input cache, ex. 8000 means 1524*8000 =12M bytes in the cache each channel. o Need to refresh all channels after modification. o For channel input buffer (unit: 1K bytes). o Value 8000, means RAM: 8M bytes for channel cache. o There are 10 channels in panel, it occupies RAM: 80M bytes for channel cache. o If the channel bitrate is 1Mbps, item#8: 8000 means 64-second video for channel cache.
Channel Streaming Prebuffer No.	o The value must be smaller than Channel Input Buffer No o For channel zapping time (unit: 1K bytes). o Value 2000, means RAM: 2M bytes for channel I-frame search. o There are 10 channels in panel, the last 20M of the 80M bytes is used for I frame search.
Channel Streaming Bitrate Tolerance	o It is for SD/HD Streaming, its value is between 0.0 and 0.99, o Value: 0.00~1.00 (ex. 0.00: SD video, 0.999: HD 25Mbps)
Channel Reconnection Interval	o Once the channel input is down, then ezserver will reconnect the input stream after x seconds.
DVR Duration	o The duration for recording live video to do timeshift functions as pause, resume, backward and forward
DASH Transcoder Path	o External DASH Transcoder path
EPG Setting	
MPEG Transport Stream	o option = 1 : Ezserver extracts EPG from MPEG Transport Stream of all channels, administrator can click EPG button of Panel to see the Program Title, Description and start/Stop time of EPG programs. Players can use Ezserver API: get_epg_info to get them, too. o option = 0 : Disable the EPG extraction of channels.
XMLTV EPG URL	o Get EPG from XMLTV URL.
System Setting	
Max Streaming No.	o The Max. Connection no. for players.

System Log Lines	o It is for log line no, ex. 1000 means 1000 log lines in log/system.log, o If 1 means ezserver will write the all log in log/system.log, o If 0 means no any log in log/system.log.
Admin System Log Lines	o It is for channel input connection and panel o It is for log line no, ex. 1000 means 1000 log lines in log/admin_system.log, o If 1 means ezserver will write the all log in log/admin_system.log, o If 0 means no any log in log/admin_system.log.
Pagination Limit Number	o Pagination Limit Number for Channel / Movie / User window.
Player Setting	
Blacklist Option	o disable/enable blacklist for illegal player connection.
Alter Player Duration	o Set alert hours for connected players. It means if the player has been watching the same channels after x hours, it will be listed in Alert Player window that supports Stop and Block buttons

Statistics



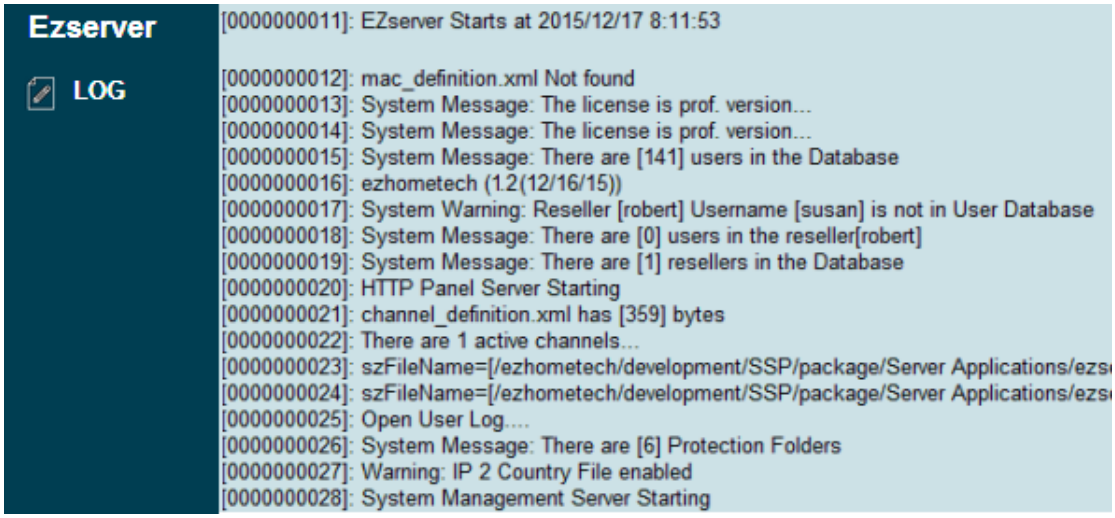
Menu

Total	Total Channel No
Auto Query	Automatically Get Statistics per 10 seconds.

Content

No.	Channel No.
CH Name	Channel Name
Today Watched No.	The accumulated watched No. of a channel.
Active Player No.	The watching no.
Uptime	Channel Uptime
Status	ON, OFF, Connecting with Buffer Index and Size.

Log

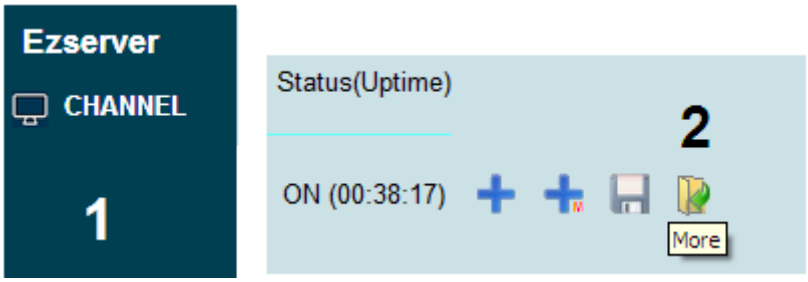


Shutdown

5. Advanced channel option

Reduce Channel Bitrate

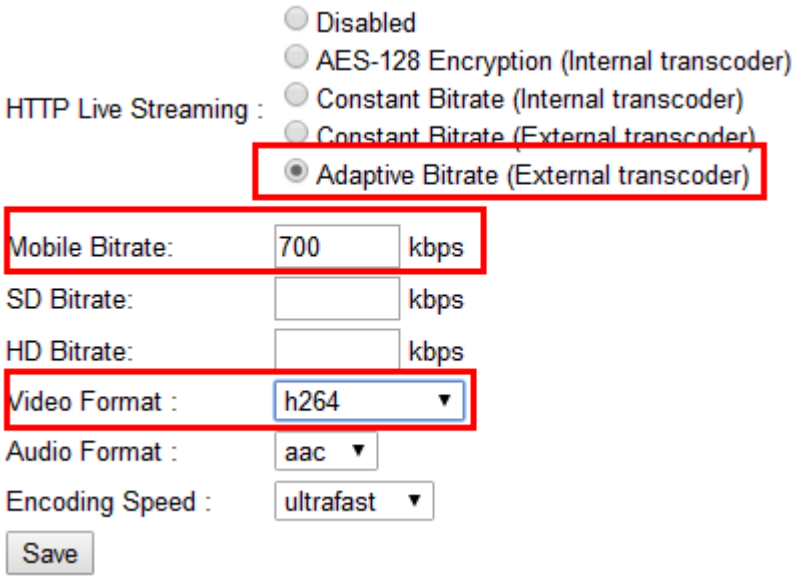
Click Channel Button and More icon to set Channel HTTP Live Streaming as below:



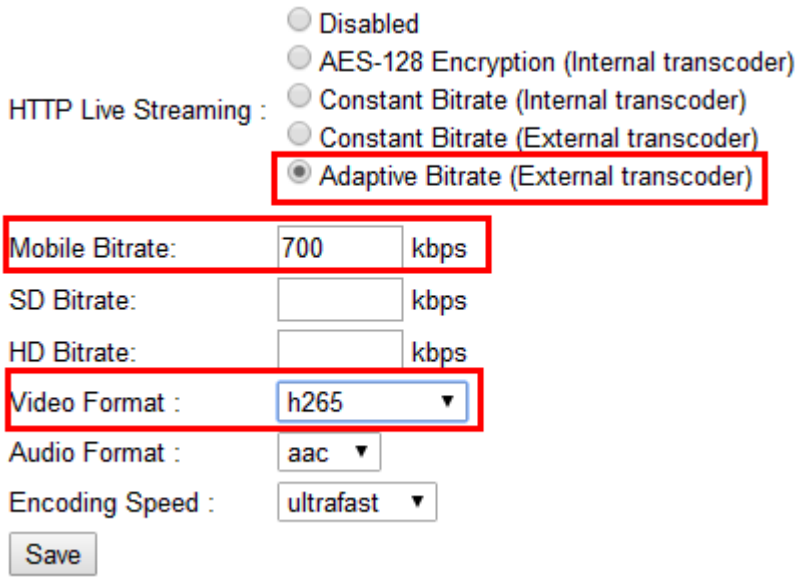
- Select Adaptive Bitrate.
- Set Mobile Bitrate to desired bitrate (unit: kbps).
- Select Video Format (h264, h265, h264_nvenc or h265_nvenc).
  - h264 and h265 options use CPU resource.
  - h264_nvenc and h265_nvenc options use Nvidia GPU resource.
    - These 2 options need Nvidia GPU card and its ffmpeg.
- **URL for restreamer or players**
  - **Syntax: http://ip_address:port/ChannelName.m3u8?u=xxxx:p=xxxx**
  - **Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx**
  - **Ex. 1:** http://test:1234@172.16.10.50:8000/TV1.m3u8
  - **Ex. 2:** http://test:1234@172.16.10.50:8000/ch4.m3u8

Examples:

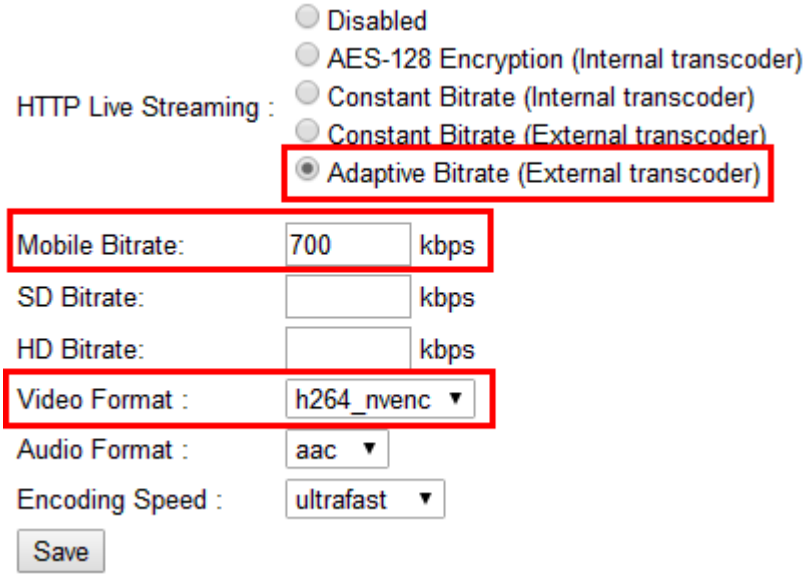
- **Option 1: Bitrate: 700kbps and video format :h264.**



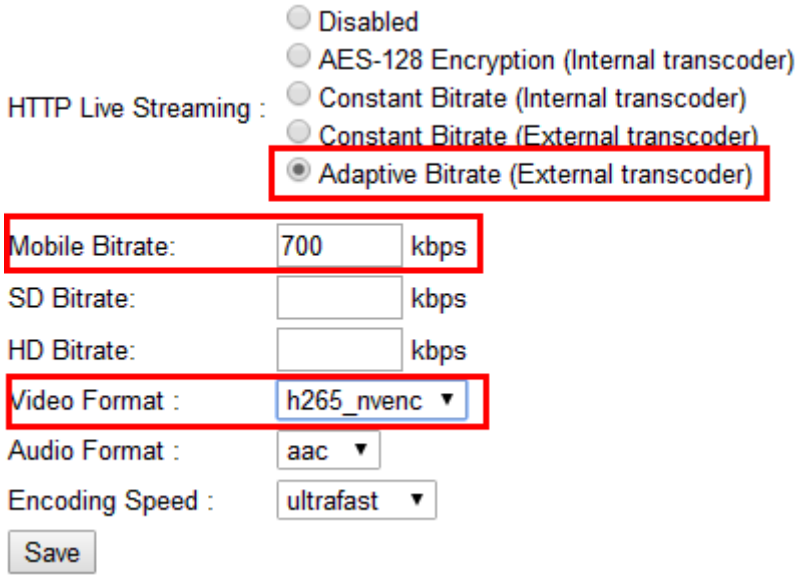
- **Option 2: Bitrate: 700kbps and video format :h265.**



- **Option 3: Bitrate: 700kbps and video format :h264_nvenc.**



- **Option 4: Bitrate: 700kbps and video format :h265_nvenc.**

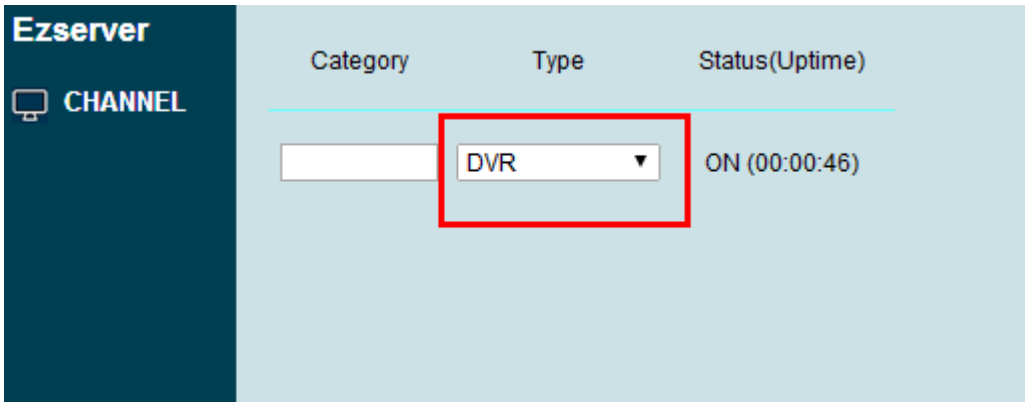


Time-Shift TV

Time-Shift TV channel is to save live stream from source URL into server local storage. When a player wants to play it, Ezserer restreams its videos from server local storage to the player. The player can backward and forward the channel with timestamp.

Set DVR type

Click Channel button and set Type to DVR, then click Save button.



Set DVR duration

Click Setting button and set DVR Duration, then click Save button.

The storage size of per channel depends on video bitrate and duration. For example,

- Channel video bitrate is 1Mbps and duration is 1 hour, the storage size needs 450M bytes. Ezserver uses triple space for one channel, so the total size is 1.35G bytes.
- 100 channels, 1Mbps bitrate, 1-hour duration, the storage size needs 45G bytes. Ezserver uses triple space for one channel, so the total size is 135G bytes.

Backword and forward by URL:

o URL Syntax: http://serverip:port/xxx?u=xxx:p=xxx::timestamp=xxxxxxxxxx

- Timestamp unit is millsecond.
- http://192.168.0.6:8000/ch1.m3u8?u=test:p=1234:timestamp=600000
- http://192.168.0.6:8000/sport.m3u8?u=test:p=1234:timestamp=600000
- The above links are to play video from the 600th second (10 min) of the DVR buffer.

A player can use .m3u8 URL without timestamp option for live (back to now) as below:

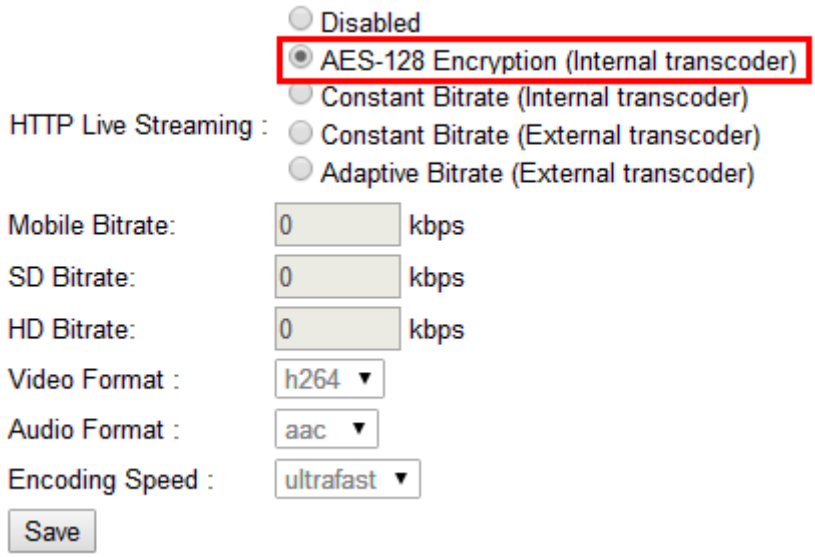
o URL Syntax: http://serverip:port/xxx?u=xxx:p=xxx:

- http://192.168.0.6:8000/ch1.m3u8?u=test:p=1234

Encrypted Time Shift TV setting:

- Click Channel Button and Click More icon

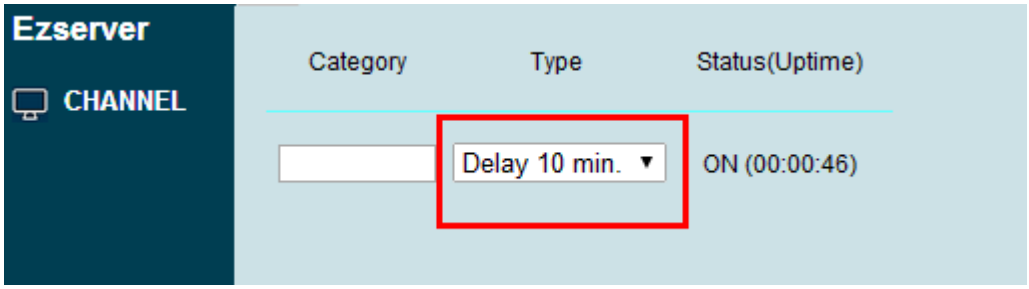
- Select HLS option to AES-128 Encryption (internal transcoder)



Time-Delay TV for NON-STOP Restreaming

Delay TV channel is to save live stream from source URL into server local storage. When a player wants to play it, Ezserer restreams its videos from server local storage to the player. The player only watch delay video from Ezserver, but the player can not backward and forward the channel.

Click Channel button and set Type to Delay x sec., min., hr, then click Save button.

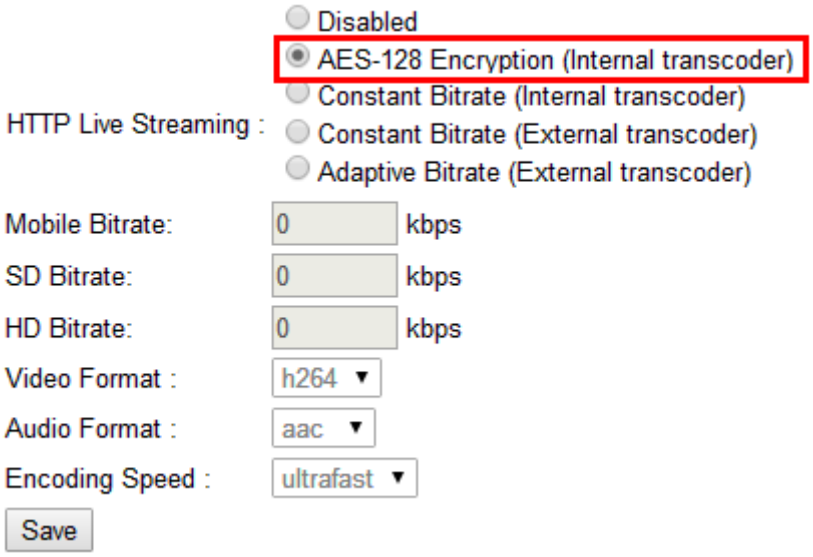


The storage size of per channel depends on video bitrate and delay time. For example,

- Channel video bitrate is 1Mbps and delay time is 1 hour, the storage size needs 450M bytes
- 100 channels, 1Mbps bitrate, 1-hour delay time, the storage size needs 45G bytes. Ezserver uses triple space for one channel, so the total size is 135G bytes.
- Use HLS link as http://192.168.0.6:8000/ch1.m3u8?u=test:p=1234 to play channels.

Encrypted Time Delay TV setting:

- Click Channel Button and Click More icon
- Select HLS option to AES-128 Encryption (internal transcoder)

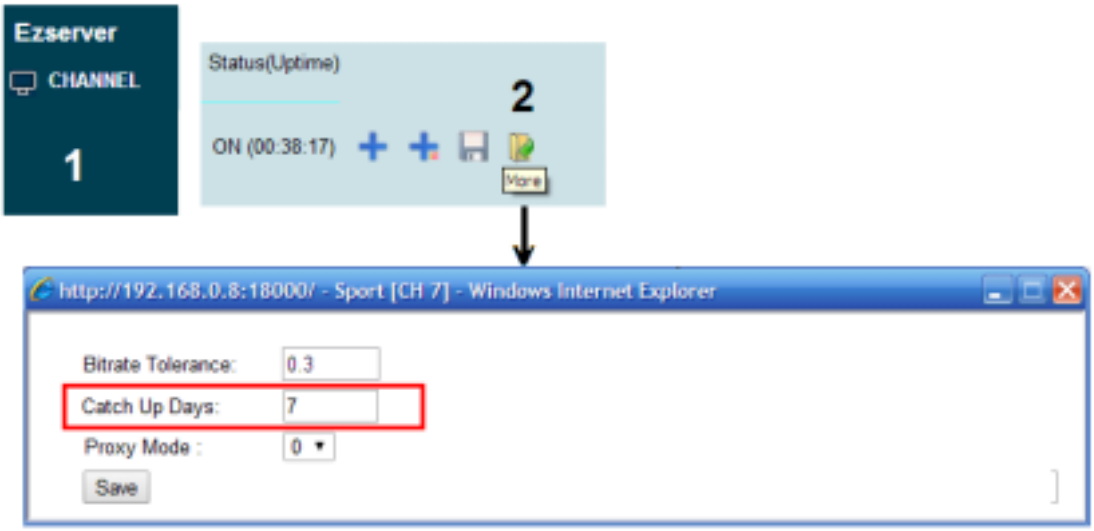


Catch up TV

This function is to record live channel into VOD movies by EPG information.

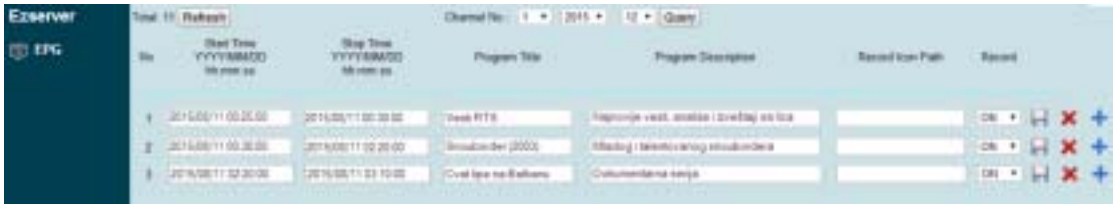
Set Catch up days

- Click Channel Button and More icon to set Catch Up Days



Set EPG time

- Click EPG button to add new program item
  - Start Time
  - Stop Time
  - Program Title
  - Program Description
  - Record Icon Path
  - Set Record Option to ON



- Ezserver add the record video information as below into Movie Panel after stop time automatically.
  - Program Title → Movie Name
  - Record Video Path → Media Source
  - Record Icon Path → Icon Path
  - Channel Category → Category

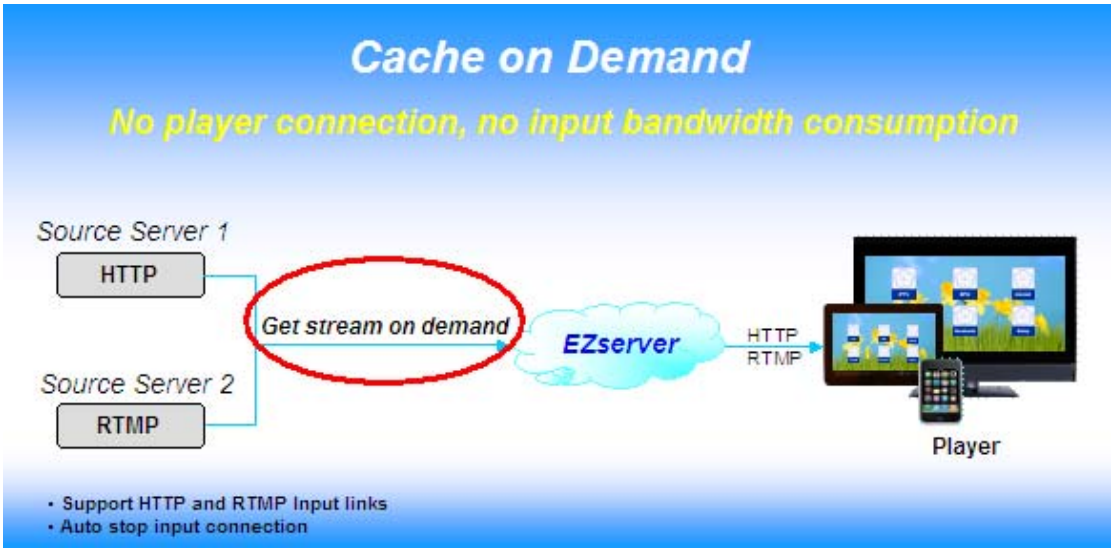
Catch up TV Example Flow:

Note: The recorded file is ezserver_enterprise /tv_program_archive/2015_05_04/CH0001_10_00.ts

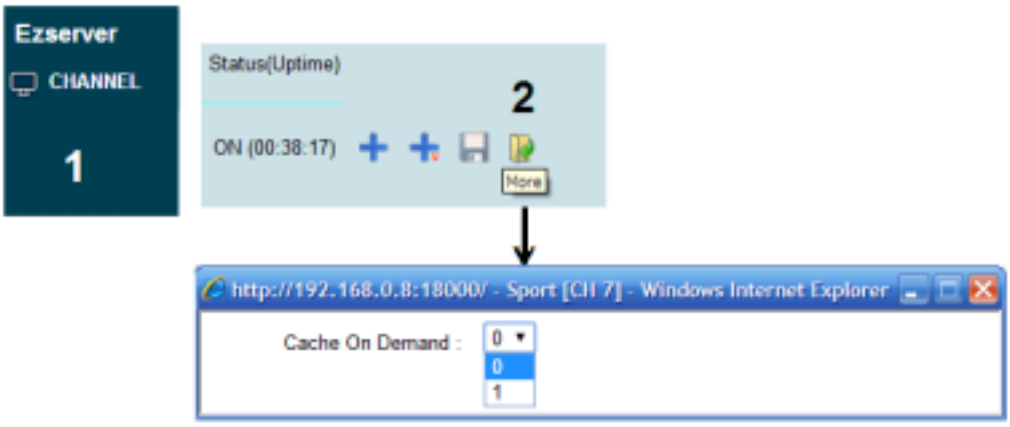
utc option in URL

- URL Syntax: http://serverip:port/xxx?u=xxx:p=xxx:utc=xxxxxxxxxx
  - http://192.168.0.6:8000/1.ch?u=test:p=1234:utc=1460763600
  - or use siptv EPG List to watch the video

Channel on demand (Cache on demand)



Channel on demand TV is that a player wants to watch a channel, ezserver checks the channel if is cached in memory. if the channel is cached, then ezserver streams the channel video from the cache to the player. If the channel is not cached, ezserver opens a connection to the input server and gets the video into cache memory, then ezserver streams the channel video from the cache to the player. Once, there is no any player to watch the channel, ezserver stops the connection of input server in order to save the incoming bandwidth of ezserver.



Additional, there are two options in ezserver_config.txt, one is for enable/disable caching for all channels, the other is for caching off interval as below:

1. cache_on_demand_channel :

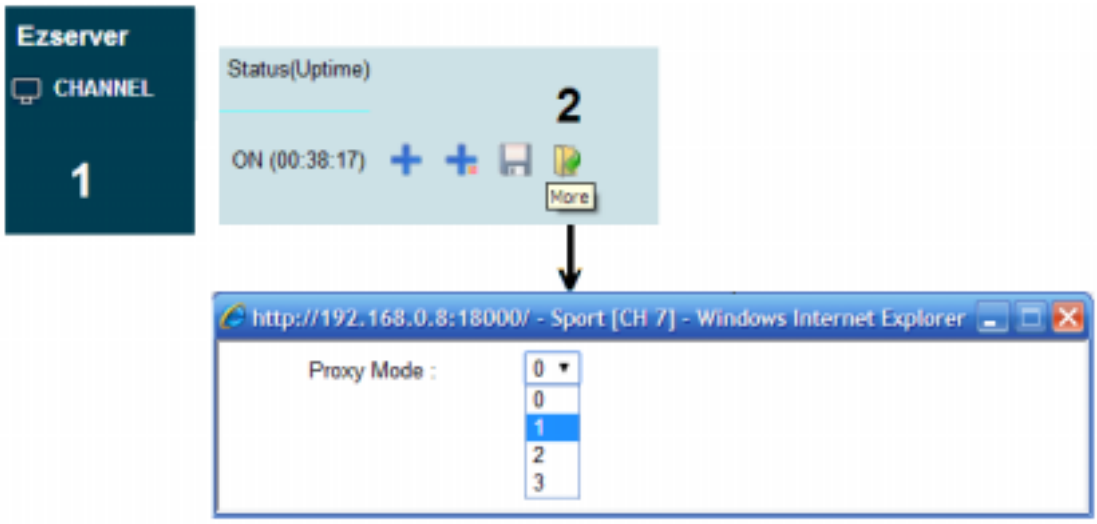
- if its value is 1, then when a player wants to watch a channel, ezserver checks the channel if is cached in memory. if the channel is cached, then ezserver streams the channel video from the cache to the player. If the channel is not cached, ezserver opens a connection to the input server and gets the video into cache memory, then ezserver streams the channel video from the cache to the player.

- If its value is 0, ezserver does not stop the connection of input server to get the video into cache memory.

2. stop_ch_cache_interval (unit: min.): is defined for cache_on_demand_channel=1. Once, there is no any player to watch the channel, ezserver stops the connection of input server after stop_ch_cache_interval value. For example, its value is 10 min, then ezserver stops the connection of input channel after 10 min.

Proxy Mode

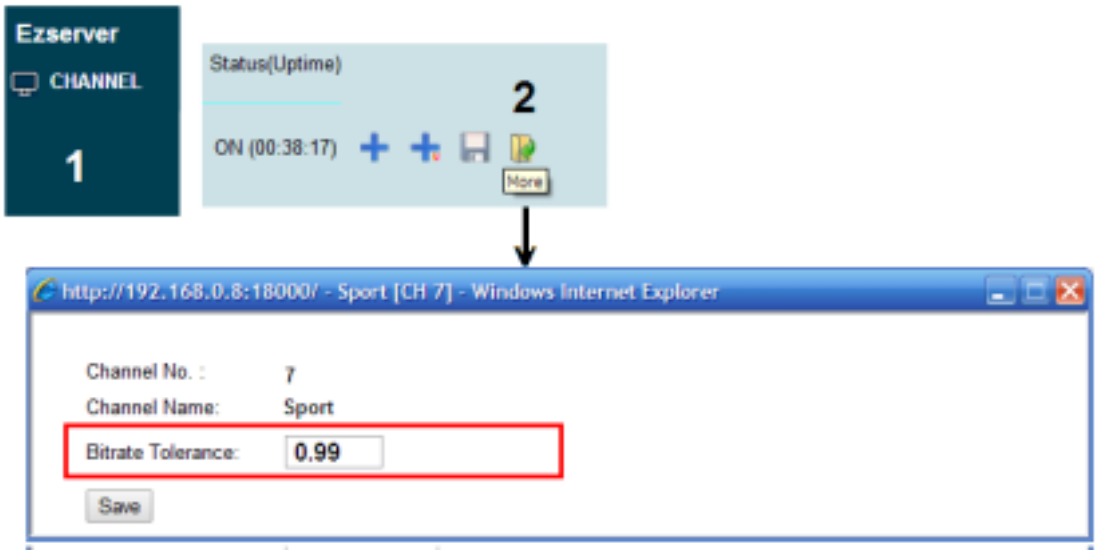
- Click More Button of a channel
- Set Channel Proxy mode to 1 / 2 / 3
  - 1: forward main URL to players
  - 2: forward balancer URL to player
  - 3: forward main / 2nd / 3 rd URLs into players



- Click Save Button

HD channel buffering

- Click More Button of a channel with over 10Mbps bitrate.
  - Set Bitrate Tolerance value to 0.99

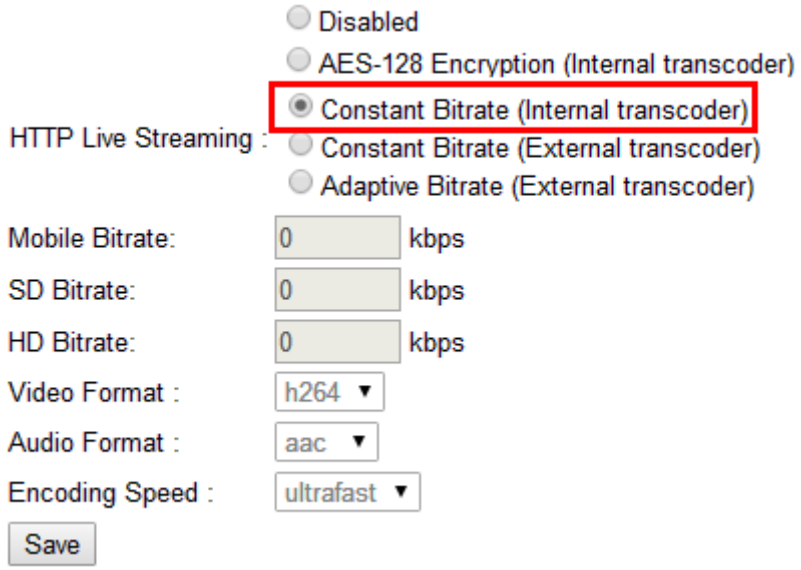


- Click Save Button

Apple HLS channel output

Enable one channel with HLS output:

- **Click Channel Button and Click More icon**
- **Select HLS option to** Constant Bitrate (internal transcoder)



Enable/Disable all channels with HLS output:

add hls_disable=1/2 in ezserver_config.txt and restart ezserver.

- hls_disable=1 means to disable all HLS channels
- hls_disable=2 means to enable all channels to HLS

Open RAMDisk to speed up streaming

- Add one optionh **RAMDisk=xxxx** in ezserver_config.txt, it can reduce load average.
  - Go to ezserver folder (ezserver_enterprise or ezserver_balancer)
  - Run "**du hls_archive**" to get hls_archive size (ex.4000), then set double size for RAMDisk.
  - RAMDisk=8000 means 8Gbytes ramdisk for hls_archive folder.
  - Linux command "**df | grep tmpfs**" to check ramdisk usage.
- ./shutdown.sh then ./start.sh

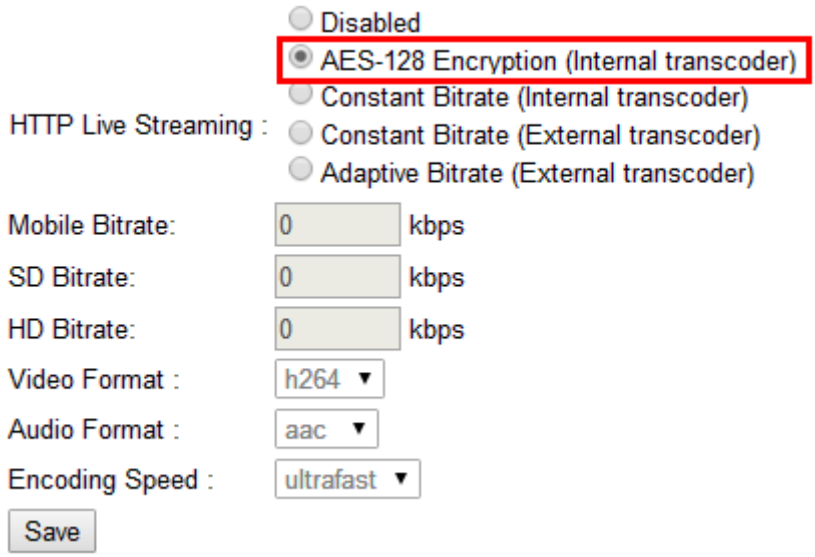
Streaming URL:

Single channel: http://192.168.0.10:8000/ch1.m3u8?u=test:p=1234

All channels: http://192.168.0.10:8000/getlink?username=test:password=1234:type**=hls**

Encrypted channel with AES-128

- **Click Channel Button and Click More icon**
- **Select HLS option to** AES-128 Encryption (internal transcoder)



- **URL for players**
  - **Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx**
  - **Syntax: http://ip_address:port/channe_name.m3u8?u=xxxx:p=xxxx**

    Ex.1: http://192.168.0.10:8000/ch1.m3u8?u=test:p=1234

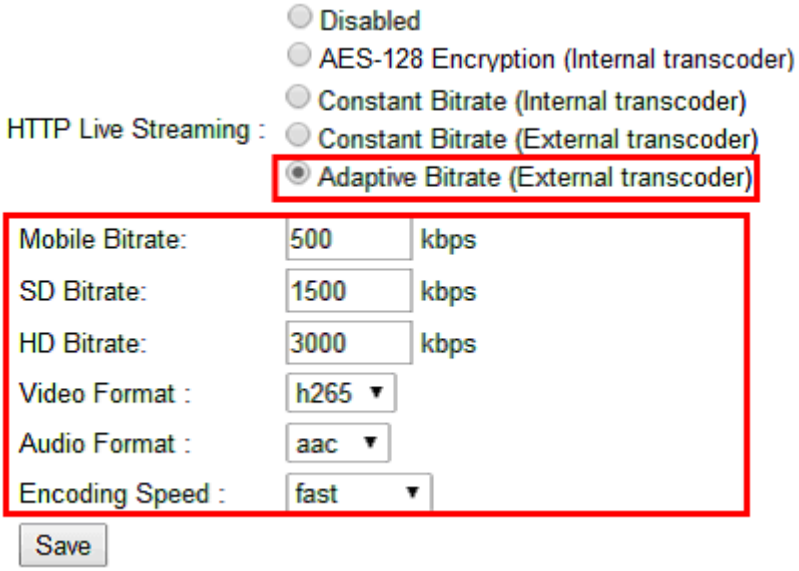
    Ex.2: http://192.168.0.10:8000/TV1.m3u8?u=test:p=1234

Adaptive Bitrate Streaming

Login Ezserver Panel and Click Setting Panel to set DASH Transcoder Path first.

- Set DASH Transcoder Path

Click Channel Button and More icon to set Channel HTTP Live Streaming as below:

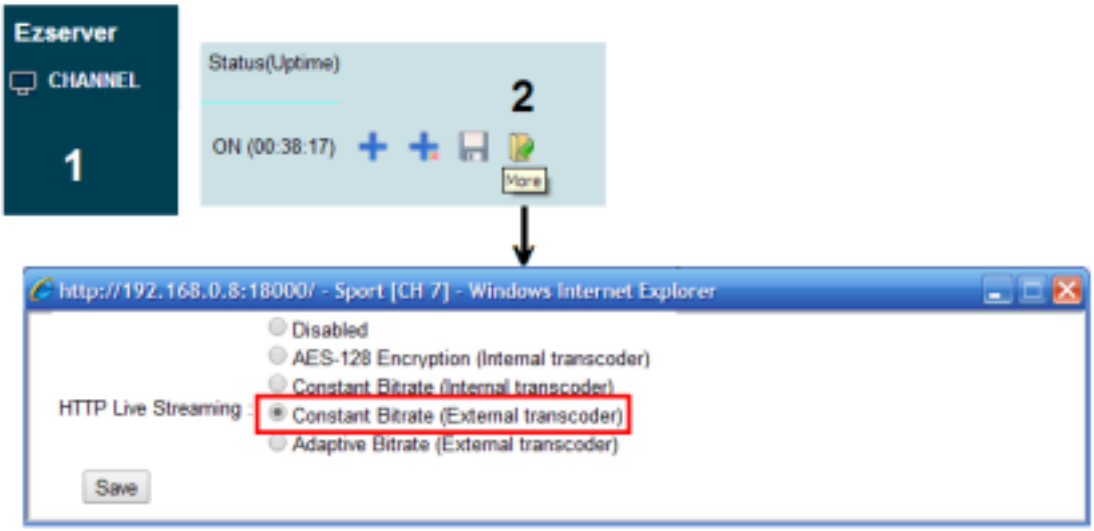


- **URL for players**
  - **Syntax: http://ip_address:port/ChannelName.m3u8?u=xxxx:p=xxxx**
  - **Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx**
  - **Ex. 1:** http://test:1234@172.16.10.50:8000/TV1.m3u8
  - **Ex. 2:** http://test:1234@172.16.10.50:8000/ch4.m3u8

Logo watermark

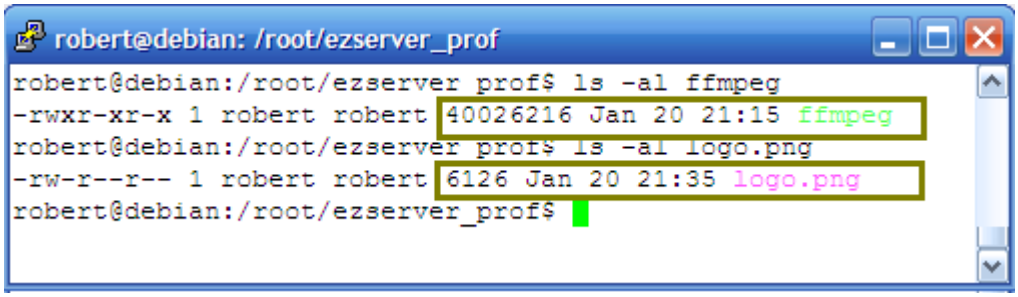
This function is to add a logo watermark on live channel. Administrator follows up the below steps to enable the live channel record:

- Click Channel Button and More icon to set Constant Bitrate(External transcoder)



- Add the below line into ezserver_config.txt
  - Linux version
    - transcoder_path=ffmpeg -i logo.png –filter_complex 'overlay=10:10'
  - Windows version
    - transcoder_path=ffmpeg.exe -i logo.png –filter_complex 'overlay=10:10'

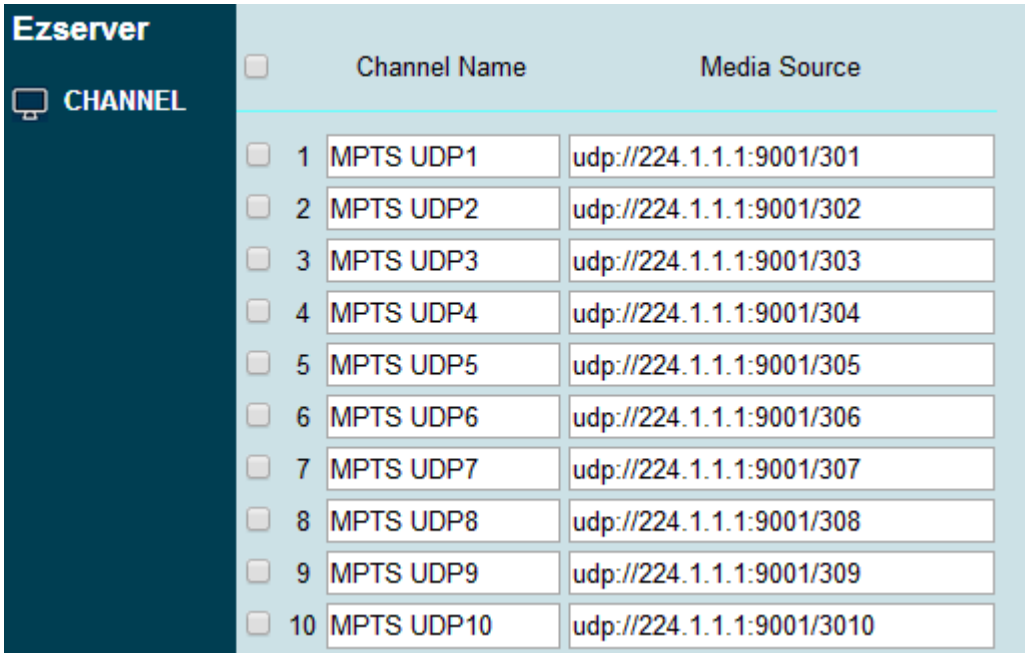
- Upload ffmpeg and logo.png into ezserver_enterprise folder.



- HLS URL for Players:
  - http://serverip:port/chx.m3u8?u=xxxx:p=xxxx.
    - http://192.168.0.10:8000/ch1.m3u8?u=test:p=1234
    - http://test:1234@192.168.0.10:8000/ch1.m3u8
  - http://serverip:port/CannelName.m3u8?u=xxxx:p=xxxx.
    - http://192.168.0.10:8000/SportTV.m3u8?u=test:p=1234
    - http://test:1234@192.168.0.10:8000/SportTV.m3u8

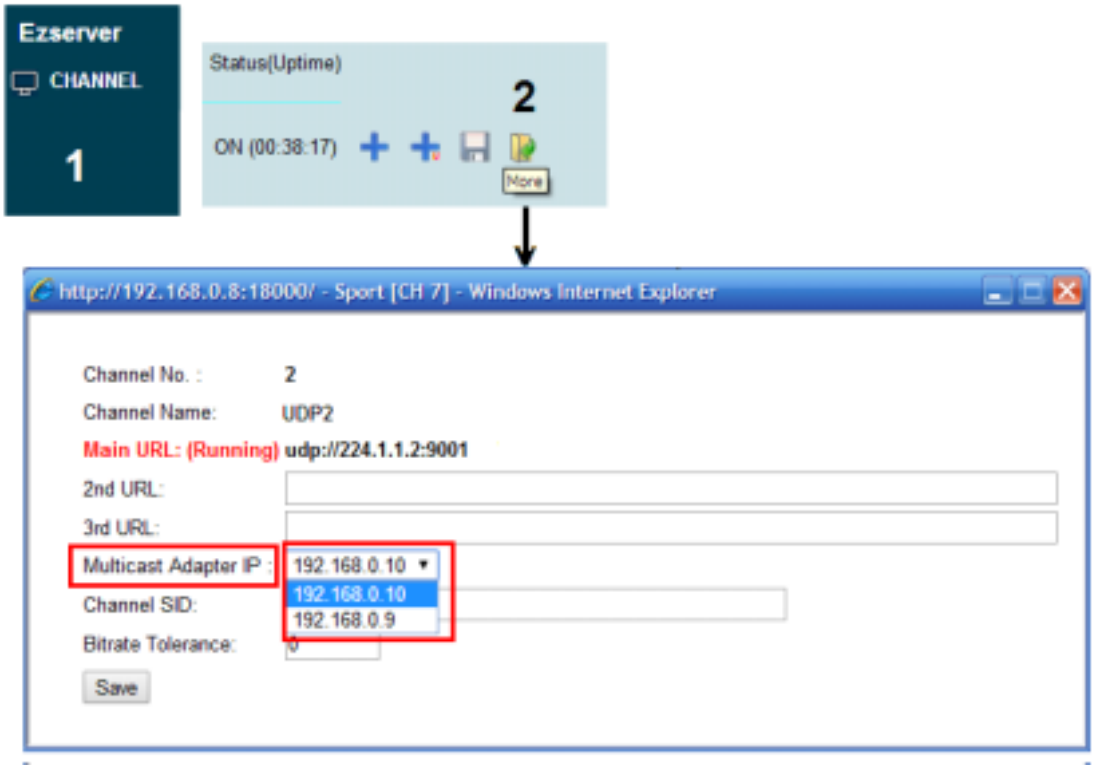
MPEG MPTS Input

Ezserver receives MPTS streams by multicast IP/Port with a program number and generates SPTS streams for video streaming to players.



For better network performance, you can use the 2nd network card for MPTS input, Please follow the below steps:

1. Click More icon of the channel as below:

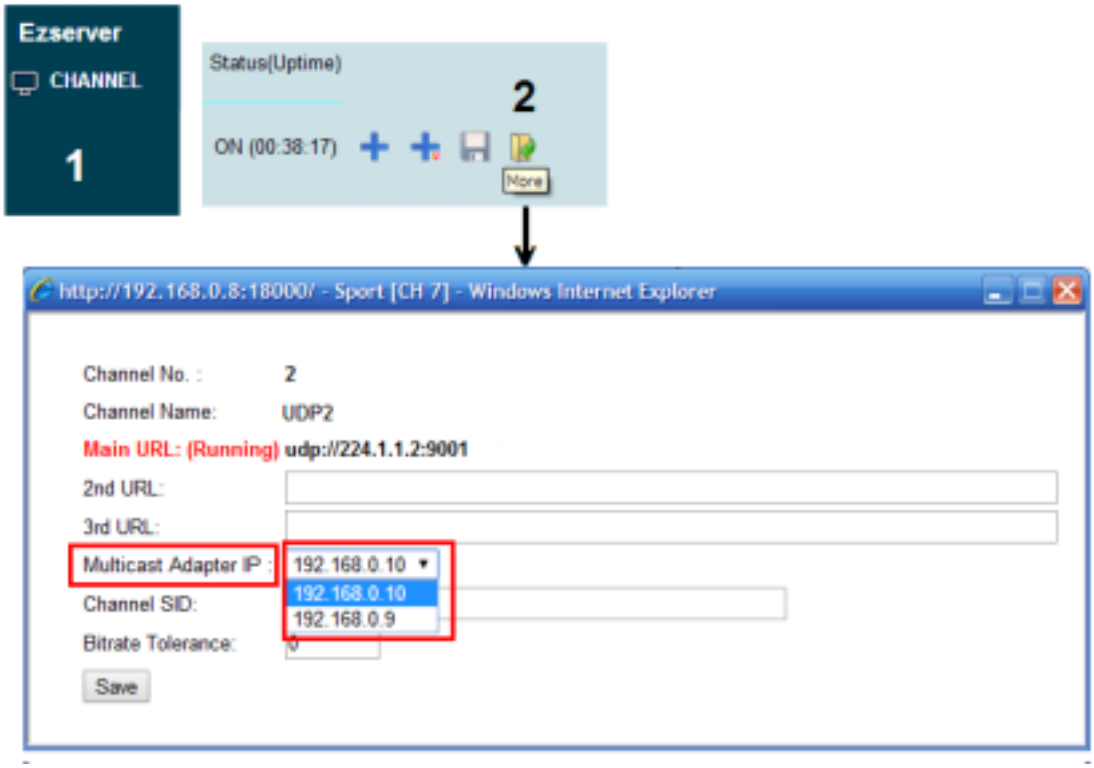


2. select one IP for multicast stream in the same LAN.

Multiple network input cards

When a server has 2 network cards, you can set the 2nd card for multicast input from an encoder. Please follow the below steps:

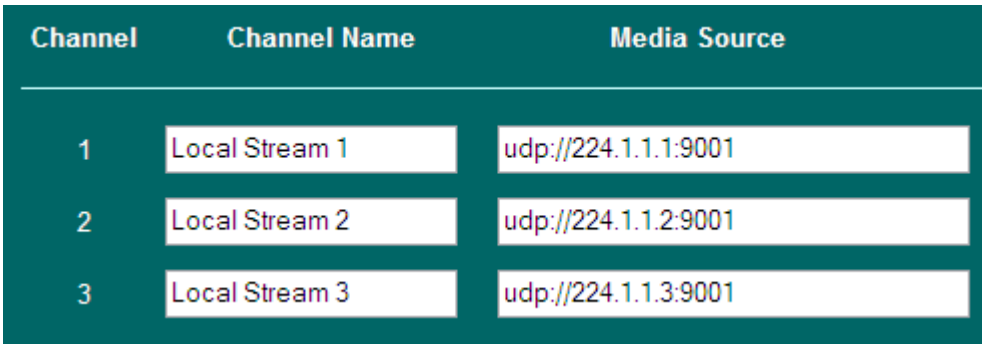
1. Click More icon of the channel as below:



2. select one IP for multicast stream in the same LAN.
3. login panel to set UDP Multicast URL in channels.

For example:

An encoder can stream multicast videos by 224.1.1.1:9001, 224.1.1.2:9001 and 224.1.1.3:9001 to the LAN with the 2nd card.



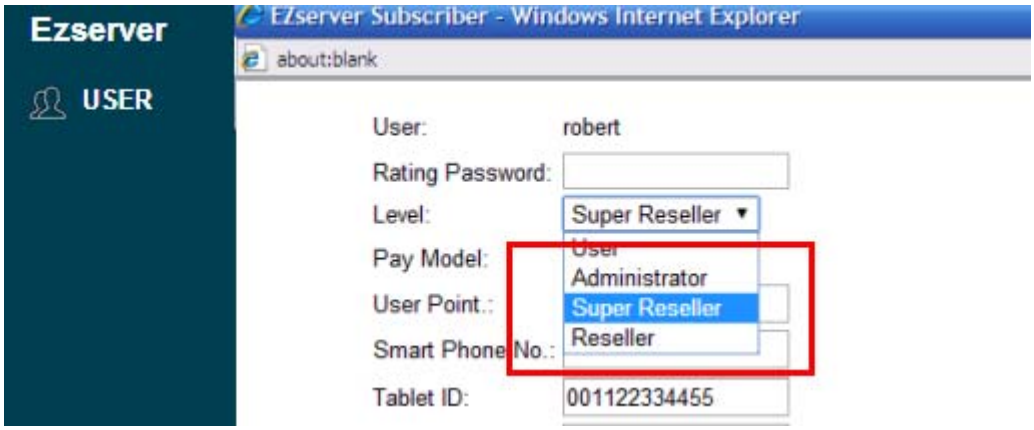
6. Reseller

Each reseller can add his own users by reseller panel. Ezserver Administrator can a new supper reseller or reseller. And a super reseller can also create his reseller from his reseller panel.

Create reseller

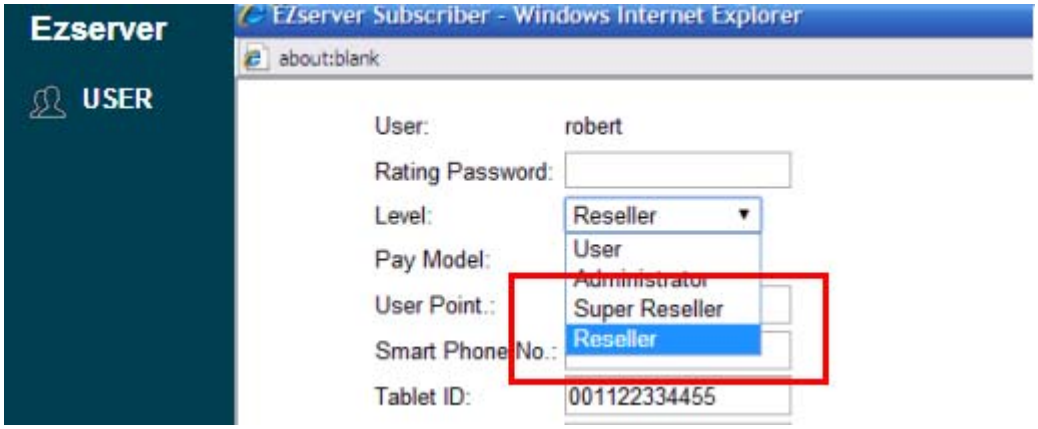
Create super reseller

- click User button
- select more icon to select Level to Super Reseller



Create reseller

- click User button
- select more icon to select Level to reseller



Reseller setting

click Reseller button

Menu Bar

Total	**The total no of Super Reseller or Reseller**

Button

Save	**Save Credit items**

Content

Reseller Name	**Reseller name MUST be created by user panel first**
Credit Option	**Enable / Disable Reseller Credit**
Credit	**Total Credit for the monthly fee of his users**
Credit Unit	**Daily or Monthly fee unit.** **reseller_credit_day** option in ezserver_config.txt to set Daily or Monthly fee unit. **reseller_credit_day=1 : Daily fee unit.** Ex. The daily fee of a user for watch video is US$2, then its value is 2. **reseller_credit_day=0: Monthly fee unit.** Ex. The monthly fee of a user for watch video is US$50, then its value is 50.
Creator	**The person created the reseller.**
Type	**Super Reseller or Reseller.**

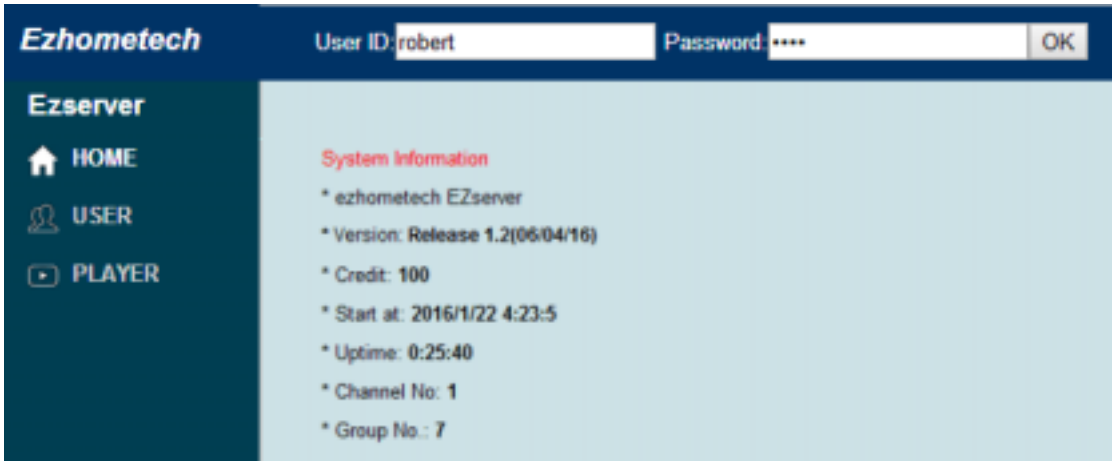
Reseller Web Management

Reseller management has two modes, one is for Super Reseller, the other is for Reseller. The difference between them is that Super Reseller can manage his reseller.

A reseller can add/edit/delete his users and monitor their connections via Internet browser. Each reseller can add his own users by reseller panel (http://serverip:port/reseller/index.htm). EX. http://192.168.0.6:18000/reseller/index.htm

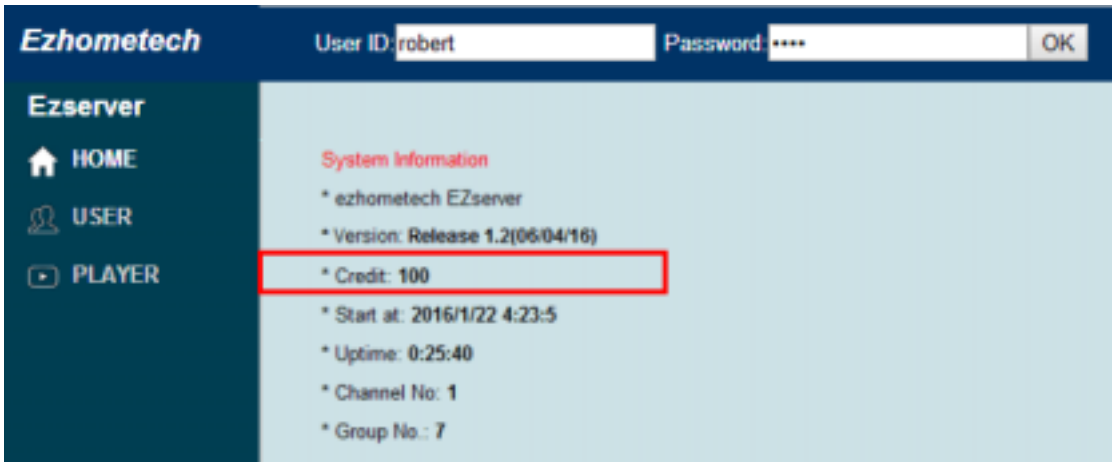
Super Reseller Panel:

Reseller Panel:



Reseller Credit:

The reseller panel will show his current Credit, if its value is 0, it means he can can not create any user.

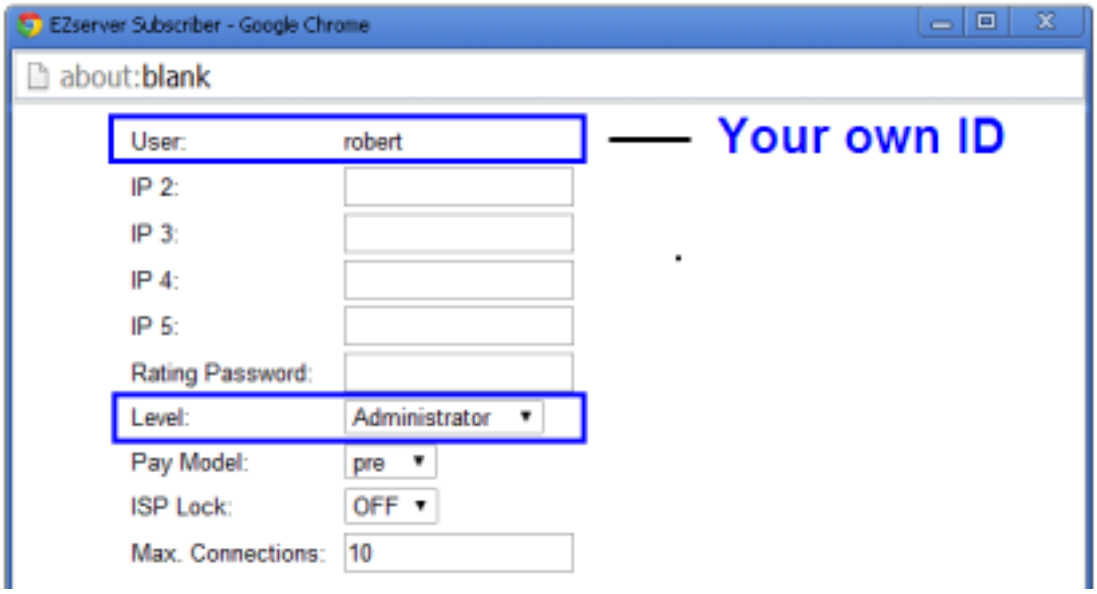


7. System maintenance

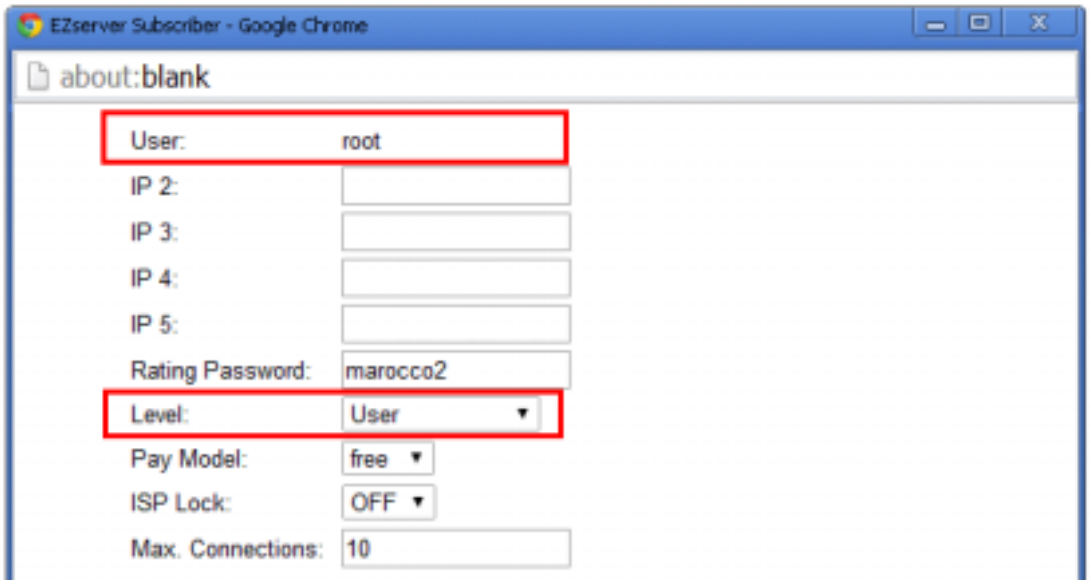
Administrator profile setting --- ***Important***

Login Panel **http://Server_IP:18000/admin/index.htm** by user id “root” and password,

- Click user button to create **your own user id** with passowrd.
- Click its more icon to change its **Level** to **Administrator**.



- Login Panel with your own ID.
- Click **root** more icon to set its **Level** to **User**.



- Login panel by root to check if root can not login panel again.

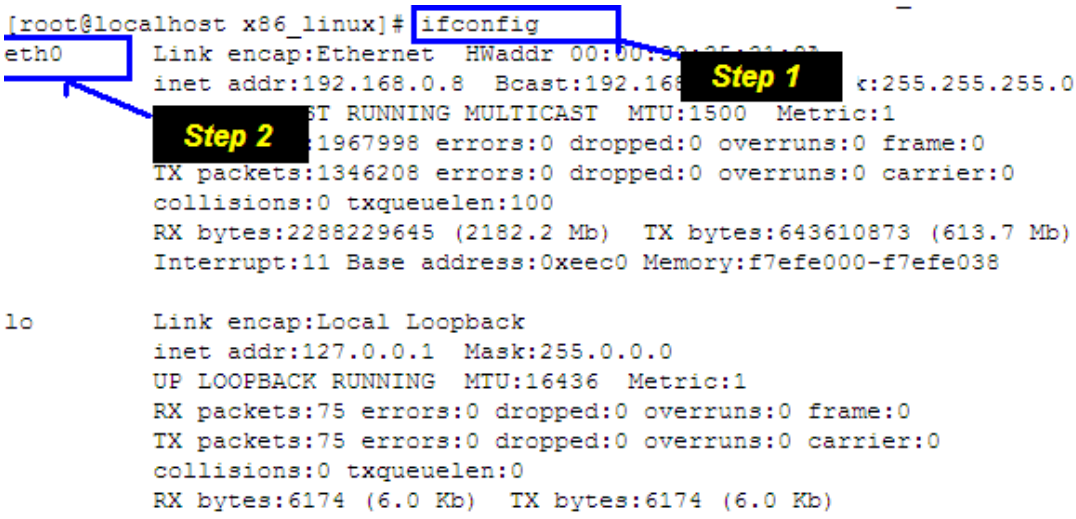
Network interface selection

The default network interface of Ezserver uses eth0, if the server does not use eth0, please change the network_interface value **in** ezserver_config.txt.

Linux platform:

Dedicated Server

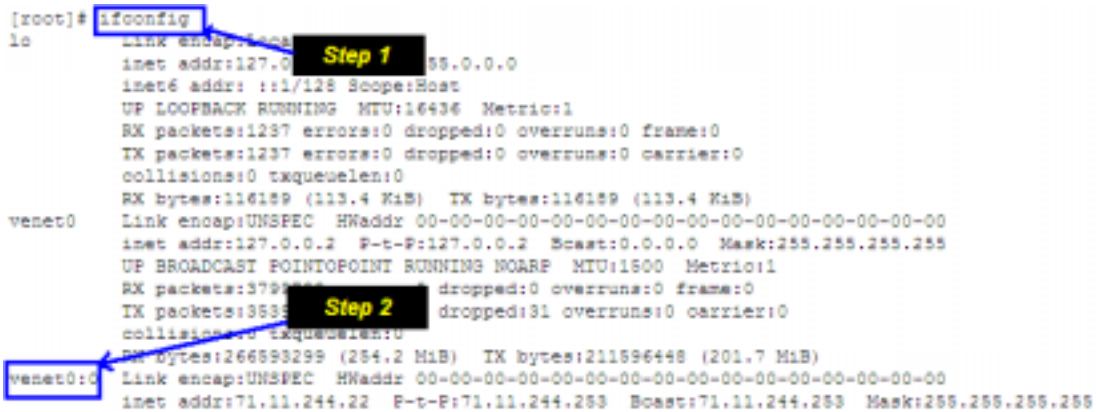
if your current network card is not eth0, Ezserver administrator needs to replace network_interface=eth0 **by** your current network interface(ex. eth1 or eth2) **of ezserver/ezserver_config.txt.**




```
path=.
startmenu=index.htm
iptv_base_port=5544
http_base_port=18000
time_zone_diff=0
httpport=8000
rtmpport=1935
igmpip=0.0.0.0
igmpport=9001
network_interface=eth1
```

Virtual Private Server(VPS)

Ezserver administrator needs to replace network_interface=eth0 **by** network_interface=venet0:0 **of ezserver/ezserver_config.txt for system configuration.**




```
path=.
startmenu=index.htm
iptv_base_port=5544
http_base_port=18000
time_zone_diff=0
httpport=8000
rtmpport=1935
igmpip=0.0.0.0
igmpport=9001
network_interface=venet0:0
```

Network Interface for Amazon EC2

The default network interface of Ezserver uses eth0, for Amazon EC2, it needs to added an alias to eth0 with the public ip as eth0:1 in Amzaon EC2 server and change network_interface value **from** eth0 **to** eth0:1 **in** ezserver_config.txt.

```
.
.
.
network_interface=eth0:1
.
.
.
```

For example, Amazon CE2 public ip is 187.178,11.1, then run below command in ssh console:

- **ifconfig eth0:1 187.178,11.1 up**
- **ifconfig (check if eth0:1 is available)**
- **change** network_interface value **from** eth0 **to** eth0:1 **in** ezserver_config.txt.

System backup and restore

- **run** ./backup_setting.sh **to backup current setting to** ezserver_backup_setting.tar
- **run** ./restore_setting.sh **to restore setting from** ezserver_backup_setting.tar

New installation with original setting in Linux

follow up the below steps (Example for /root/ezserver enterprise)

- rename ezserver_ enterprise to ezserver_ enterprise _old
- go to ezserver_ enterprise _old folder
- run ./shutdown.sh to shutdown ezserver
- run ./backup_setting.sh to backup current setting to ezserver_backup_setting.tar
- cd root
- run ./install.sh to get the new installaton files
- input password
- cp /root/ezserver_ enterprise_old/ezserver_backup_setting.tar /root/ezserver_enterprise/
- run ./restore_setting.sh to restore setting from ezserver_backup_setting.tar
- run ./setup.sh to select autostart option
- run ./start.sh to start ezserver
- **For not same server, need to send new serial_number.txt to sales@ezhometech.com for license activation.**

Move Folder for Disk full in Linux

follow up the below steps

(Ex. : move /root/ezserver enterprise to /home/ezserver enterprise)

- **remove autostart command in /etc/crontab**
- tar cvfz 1.tar /root/ezserver_enterprise/
- copy 1.tar into /home folder
- cd /home
- tar xfvz 1.tar
- cd /home/ezserver_enterprise
- run ./setup.sh to select autostart option
- run ./start.sh to start ezserver

System update

There are 2 ways to update software. One is to update patch files. The other way is to update the whole folder.

- **Get patch files (**recommended**):**
  - **./patch.sh**
  - Input **patch password**
  - After patch sucessfully
  - **./shutdown.sh**
  - **./start.sh**
- **Backup ezserver_enterprise folder** into ezserver_enterprise _ddmmyy folder and download the newest version with the current setting in your server.
  - **./update_latest_ezserver.sh**
  - Input **patch password**

Auto start

Ezserver can automatically restart streaming services when Linux booting, ezserver suddenly closed or at specified time. There are 3 options for Ezserver restarting

Option A: Run ./install.sh in /root/ezserver_enterprise folder to select “y” in auto start setting.

Option B: Run ./setup.sh in /root/ezserver_enterprise folder to select “y” in auto start setting.

Option C: Run crontab –e in ssh console and add the below line in the end of the file:

*/1 * * * * /root/ezserver_enterprise/checkmo.sh

Option D: Run ./start.sh in /root/ezserver_enterprise.

Option E: Defined the restart times by hour:minute in ezserver_config.txt. It can have multiple restart time.

```
.
restart=(hh:mm),(hh:mm),(hh:mm)
.
```

For example:

restart=(00:00),(12:30),(18:45),(20:30), then Ezserver will restart at 00:00, 12:30, 18:45 and 20:30 per day.

Channel Input Re-Connection

Sometimes HTTP or RTMP input of an Ezserver channel is dropped that is happened by some network failure or input server closed and etc..There are two ways for dropped channels, one is Ezserver will automatically re-connect the dropped channels after seconds, the other is by refresh channels via Ezserver panel manually.

1. For automatically reconnection, there are two options, one is by channel_reconnection_interval in ezserver_config.txt , the other is default setting.

For example:

- If channel_reconnection_interval =7, Ezserver will reconnect the dropped channel after 7 seconds.
- The default option is that Ezserver reconnects it after 5 sec., if failed to get video stream from input link, it will try after 10 sec., 15 sec., 20 sec., 25 sec., 30 sec., 10 min.. If the link is still dropped after 10 min, Ezserver will try it again.

2. For manually re-connection, you can login Ezserver panel and use refresh button of the dropped channel to do re-connection.

Remote storage

For external movies in other servers or outside ezserver folder, you can use Linux Symbolic Link **or** NFS **to insert them into ezserver folder.**

EX. Symbolic Link

- **mkdir /root/movie**
- **upload your movie into /root/movie folder**
- **cd /root/ezserver_enterprise**
- **ln /root/media –s media/videos/**
- **ls media/videos/**

EX. NFS

Install NFS in ezserver IP is 192.168.0.10 and Storage Server IP is 192.168.0.8.

Login server 192.168.0.8

- **mkdir /root/movie**
- **add “/root/movie 192.168.100.10(rw)” in /etc/exports**
- **. /etc/init.d/nfs-kernel-server restart**
- **showmount -e localhost**

Login server 192.168.0.10

- **cd /root/ezserver_enterprise**
- **mount -t nfs 192.168.0.8:/root/movie media/videos/**

Notice video / image setting

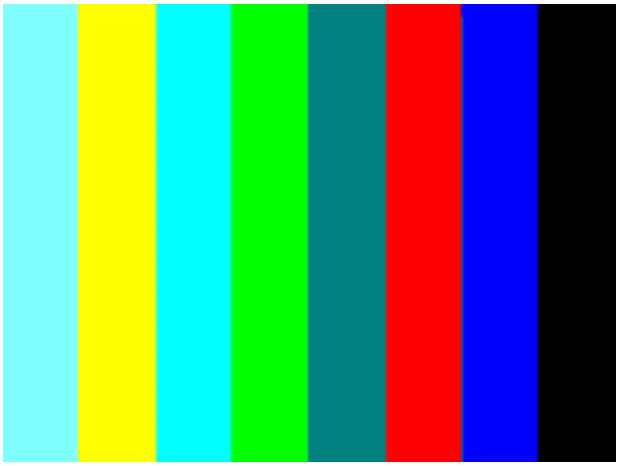
Offline Channel Setting

When a channel is not available for players as source url fails, Administrator can set a default image (PNG or JPG format) or video for this case to let users know it. The default image is in admin/channel_off.PNG

Set channel_off_video_path=path **in ezserver_config.txt, then start ezserver again.**

Ex: channel_off_video_path=media/videos/channel_off.flv

or channel_off_video_path=admin/channel_no_signal.PNG



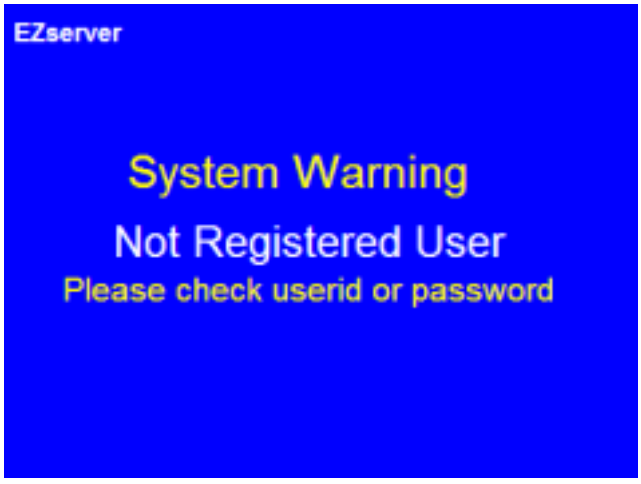
Not Registered User Setting

When a user connects ezserver with wrong userid or passowrd ,administrator can set a default image (PNG or JPG format) or video to inform the user. The default image is in admin/not_registered_user.PNG.

Set unregistered_user_video_path=path **in ezserver_config.txt, then start ezserver again.**

Ex: unregistered_user_video_path=media/videos/not_registered_user.flv

or unregistered_user_video_path=admin/not_registered_user.PNG



Exceed max connections allowed

When a user connects ezserver with multiple connections at same time, administrator can set a default image (PNG or JPG format) or video to inform the user. The default image is in admin/ exceed_max_connections_allowed.PNG.

Set exceed_max_connects_allowed_video_path=path **in ezserver_config.txt, then start ezserver again.**

Ex:exceed_max_connects_allowed_video_path=media/videos/exceed_max_connections_allowed.flv or exceed_max_connects_allowed_video_path=admin/exceed_max_connections_allowed.PNG

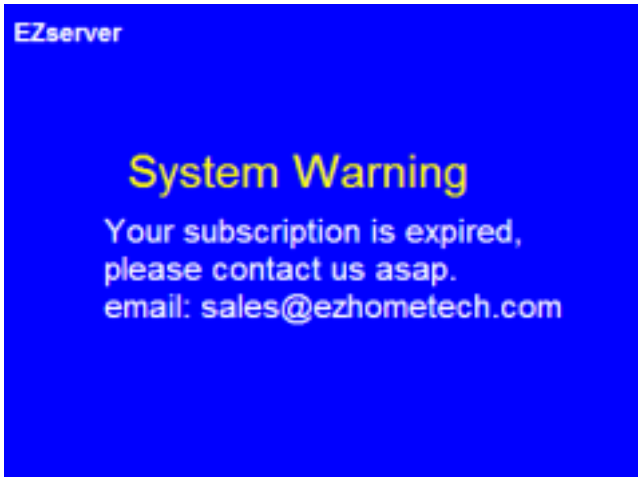
Time-Expired Setting

When a user subscription is expired and need to notice him, Administrator can set a default image (PNG or JPG format) or video for this case to inform the user. The default image is in admin/time_expired.PNG

Set time_expired_video_path=path **in ezserver_config.txt, then start ezserver again.**

Ex: time_expired_video_path=media/videos/time_expired.flv

or time_expired_video_path=admin/time_expired.PNG



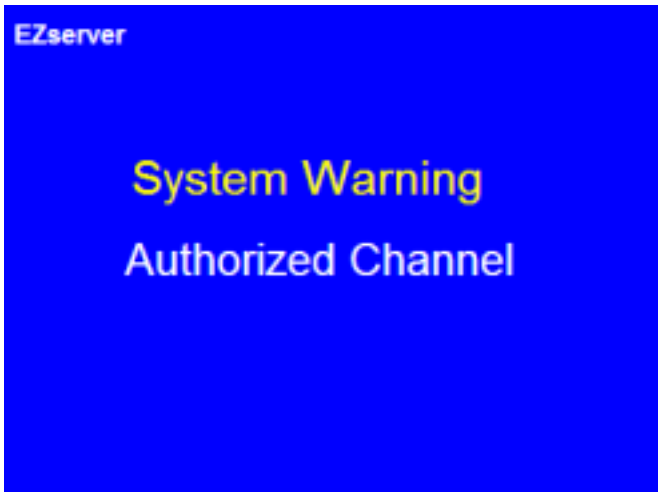
Unauthorized Channel Setting

When a user wants to watch unauthoirzed channels, administrator can set a default image (PNG or JPG format) or video to inform the user. The default image is in admin/authorized_channel.PNG.

Set authorized_channel_video_path=path **in ezserver_config.txt, then start ezserver again.**

Ex: authorized_channel_video_path=media/videos/authorized_channel.flv

or authorized_channel_video_path=admin/authorized_channel.PNG



Reduce Load average

- When channel output supports HLS output, it may have higher load average.
- Add one optionh **RAMDisk=xxxx** in ezserver_config.txt, it can reduce load average.
  - Go to ezserver folder (ezserver_enterprise or ezserver_balancer)
  - Run "**du hls_archive**" to get hls_archive size (ex.4000), then set double size for RAMDisk.
  - RAMDisk=8000 means 8Gbytes ramdisk for hls_archive folder.
  - Linux command "**df | grep tmpfs**" to check ramdisk usage.
- ./shutdown.sh
- ./start.sh

System shutdown

- **Press Ctrl + C keys after ./start.sh in SSH console**
- **Go to ezserver directory to run ./shutdown.sh in SSH console**
- **Login IPTV Panel and click shutdown button, Ezserver will restart after 1 second.**

DNS server setting

Ezserver needs Name2IP function, Ezserver already has the default value of a DNS IP. but it will be better to change that to the nearest DNS IP.

- Find the nearest DNS IP as the below:
  - Login ssh and run "nslookup www.google.com"
    - **Server: 192.168.0.1 ← this Is the nearest DNS IP**
    - Address: 192.168.0.1#53
- Open ezt_dns.txt to change 8.8.8.8 to the nearest DNS IP

System diagnostics

Enable Ezserver system log as below:

- Replace "system_log=0" by "system_log=1" in ezserver_config.txt.
- Restart Ezserver, then it will create a system log file, called "system.log" in Ezserver folder.
- Shutdown Ezserver by Ezserver System Management to get the whole log information.
- If "system_log=xxxx" : Ezserver logs xxx lines in system.log. e.g. "system_log=1000" in ezserver_config.txt, Ezserver logs 1,000 messages in the file.
- When system checks any error, it will dump information to system.dump.

System Token Control

Restore token after ezserver restarting:

- Add one optionh **token_restore=1** in ezserver_config.txt.
- ./shutdown.sh
- ./start.sh
- Ezserver will restore all vaild tokens after restarting.

Token expired: (unit: hour)

- Add one optionh **token_period=12** in ezserver_config.txt, it means created token will be expired after 12 hours.
- **token_period=5.5** in ezserver_config.txt, it means created token will be expired after 5 hours 30 min..
- ./shutdown.sh
- ./start.sh

Linux Script

Ezserver provides some scripts for setup, update software and etc…

- start.sh
  - **Start ezserver and monitor.sh.**
- shutdown.sh
  - **Stop ezserver and monitor.sh.**
- monitor.sh
  - **Check ezserver process available and restart ezserver automatically.**
- setup.sh
  - **Setup network interface, Panel port, Streaming port, Auto start and create serial_number.txt.**
- patch.sh
  - **Get the newest version with password.**
  - **update patch files only.**
- update_latest_ezserver.sh
  - **Get the newest version with passoword.**
  - **Backup ezserver_enterprise folder with current date.**
  - **Download the newest version.**
  - **Restore the current setting back.**
- backup_setting.sh
  - **This script is prepared for new installation and backup the current setting of ezserver_ enterprise folder.**
  - **create** ezserver_backup_setting.tar
- restore_setting.sh
  - **This script is to restore the current setting into the new ezserver_ enterprise folder.**
  - **restore setting from** ezserver_backup_setting.tar

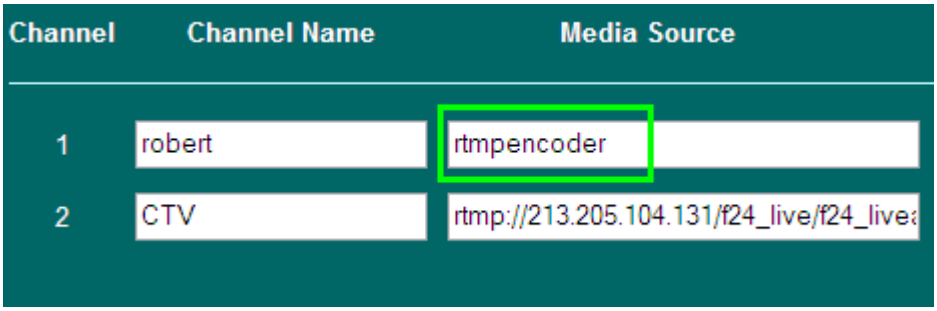
8. Encoder integration

RTMP Encoder to Ezserver

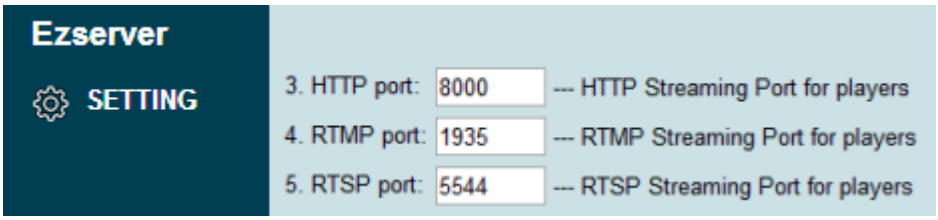
Ezserver supports RTMP Encoder as Adobe FME, XSplit and etc..

First set the below setting in Ezserver,

- **Define** Channel Name **and "**rtmpencoder**" keyword in Channel Management.**
- **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **:** ***rtmpencoder***



- **Set rtmp port to 1935 in Streaming Ports Panel**



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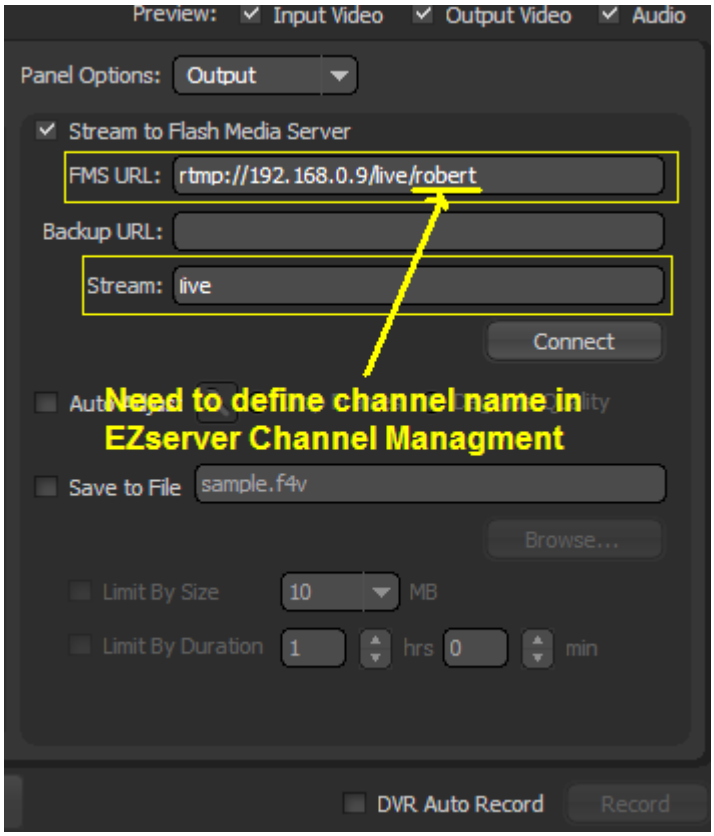
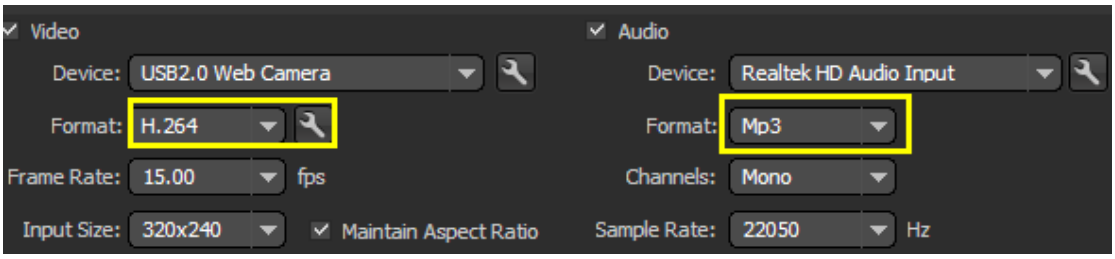
Adobe FME Setting:

- **Set FMS URL as the below**
  - **Syntax: rtmp://**serverip:port**/**live**/**channel_name**.**
  - **ex. : rtmp://192.168.0.9/live/**robert
  - **ex. : rtmp://192.168.0.9:**1938**/live/**robert **(If rtmp port is not 1935 in Ezserver Panel Setting, it needs to assign port no. into FRM URL)**



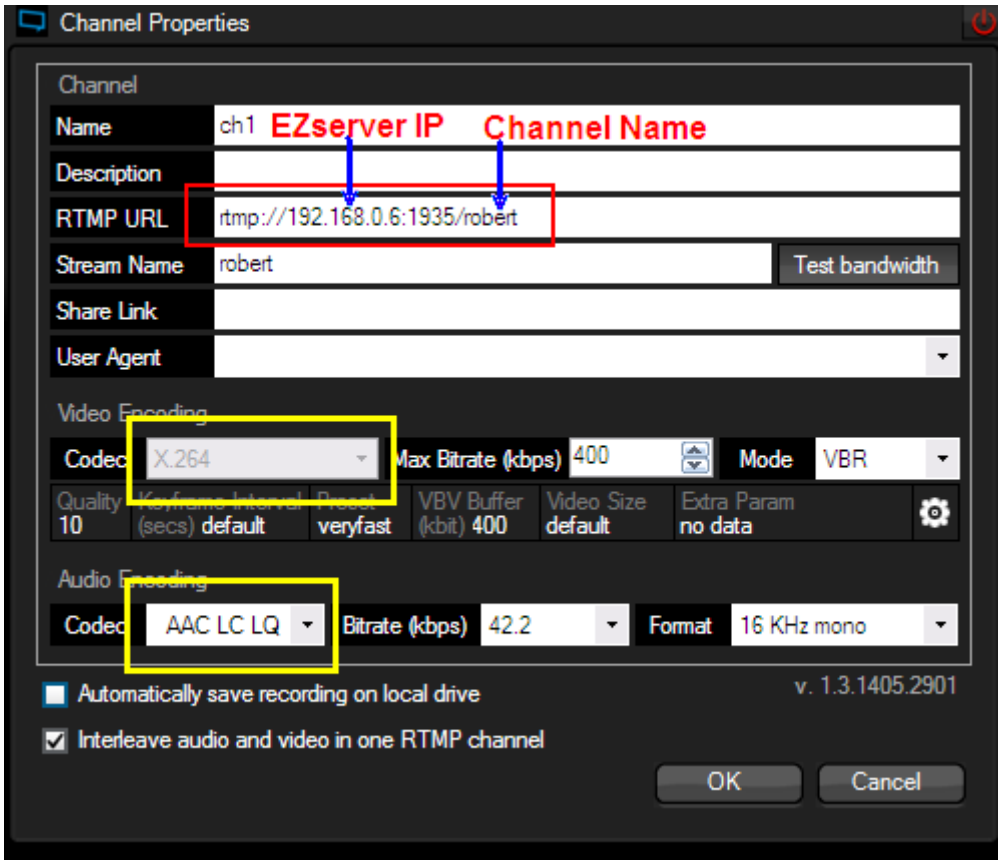
- **Select Video Format : H.264 and Audio format : Mp3/AAC, Stereo**



- **Select one of three bitrate options**

XSplit Setting:

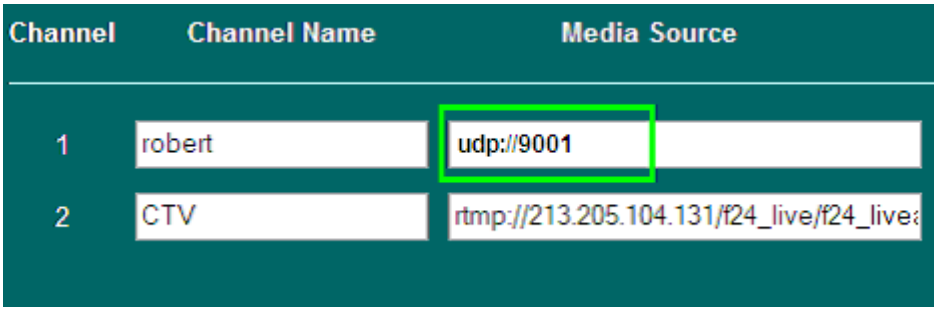
- **Set RTMP URL as the below**
  - **Syntax: rtmp://**serverip:port**/**channel_name**.**
  - **ex. : rtmp://192.168.0.6/**robert
  - **ex. : rtmp://192.168.0.6:**1938**/**robert **(If rtmp port is not 1935 in Ezserver Panel Setting, it needs to assign port no. into RTMP URL)**



- **Select Video Format : X.264 and Audio format : AAC, Stereo**

FFMPEG Encoder to Ezserver

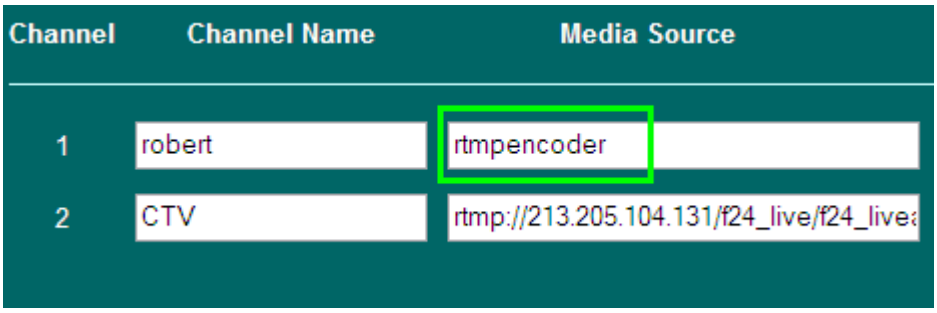
1. Check **ffmpeg in /ezserver_enterprise folder.**
2. Create new channel in Ezserver Panel as below:
   - **Login Ezserver Panel**
   - **Click Channel button**
   - **Define** Channel Name **and udp port**
   - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **: udp://9001**



3. Send transcoding stream into Ezserver as below:
   - **Login your server by putty**
   - **cd /root/ezserver_enterprise**
   - **./ffmpeg -i** http://192.168.1.100:8001/1:0:1:135:2:1:5F0B1BF:0:0:0**: -f mpegts udp://127.0.0.1:9001?pkt_size=1316**
4. Check channel status in Ezserver Panel as below:
   - **Login Ezserver Panel**
   - **Click Channel button**
   - **Check the channel status**

More technical information for ffmpeg to ezserver as below:

- WebCam or Capture Card Input and RTMP Output
  - **Define** Channel Name **and "**rtmpencoder**" keyword in Channel Management.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **:** ***rtmpencoder***

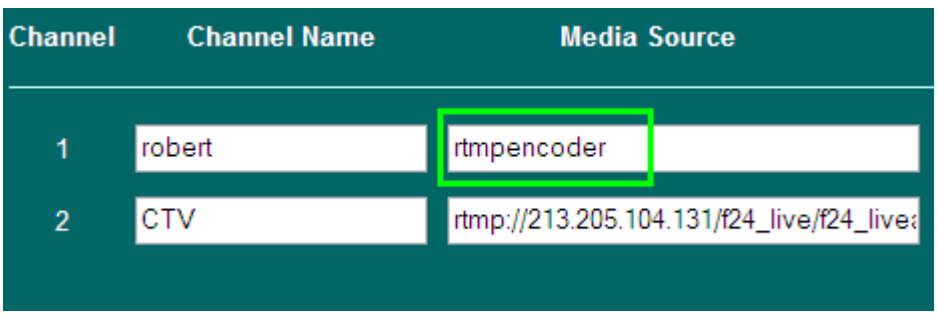


  - **Use the below command to get the video/audio capture name from your window pc.**
    - **ffmpeg.exe -list_devices true -f dshow -i dummy**
  - **Rtmp command syntax is below:**
    - **ffmpeg.exe -f dshow -i video="video device name":audio="audio device name" -preset ultrafast -vcodec libx264 -b 300k -bt 300k -s 320x240 -acodec aac -ar 44100 -ab 128k -strict experimental -f flv rtmp://192.168.0.9/live/robert**

ex.

ffmpeg.exe -f dshow -i video="USB2.0 Web Camera":audio="Realtek HD Audio Input" -preset ultrafast -vcodec libx264 -b 300k -bt 300k -s 320x240 -acodec aac -ar 44100 -ab 128k -strict experimental -f flv rtmp://192.168.0.9/live/robert

- RTMP Input and RTMP Output
  - **Define** Channel Name **and "**rtmpencoder**" keyword in Channel Management.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **:** ***rtmpencoder***



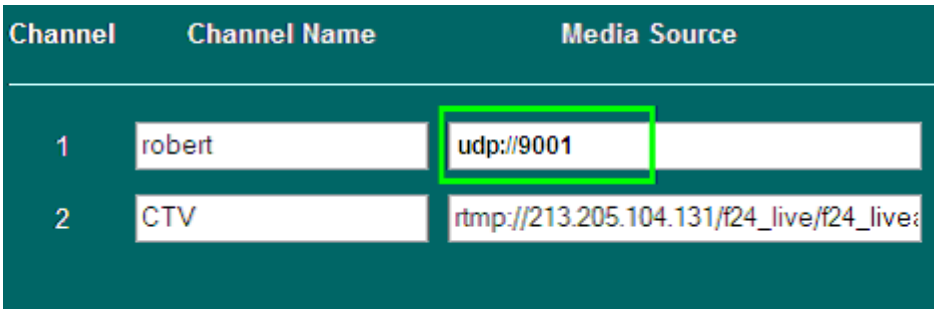
  - **Rtmp command syntax is below:**
  - **./ffmpeg -i** rtmp://input_server_ip:port/live/kid **-preset ultrafast -vcodec libx264 -b**

300k -bt 500k -s 720x480 -acodec aac -ar 44100 -ab 128k -strict experimental -f flv rtmp://ezserver_ip/live/robert

ex.

./ffmpeg -i rtmp://211.23.12.11:1935/live/kid **-preset ultrafast -vcodec libx264 -b 300k -bt 500k -s 720x480 -acodec aac -ar 44100 -ab 128k -strict experimental -f flv** rtmp://192.168.0.8/live/robert

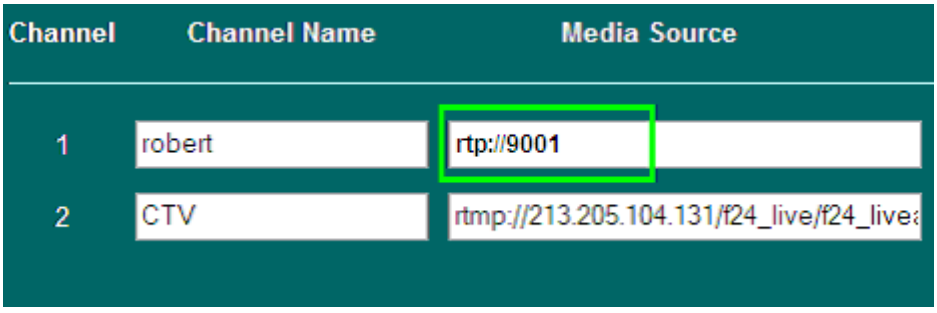
- RTMP input and UDP transport Stream Output
  - **Define** Channel Name **and udp port in Channel Management.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **: udp://9001**



ex.

./ffmpeg -i rtmp://211.23.12.11:1935/live/kid **-preset ultrafast -vcodec libx264 -b 300k -bt 500k -s 720x480 -acodec aac -ar 44100 -ab 128k -strict experimental -f mpegts udp://192.168.0.8:9001?**pkt_size=1316

- RTMP Input and RTP transport Stream Output
  - **Define** Channel Name **and udp port in Channel Management.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **: rtp://9001**

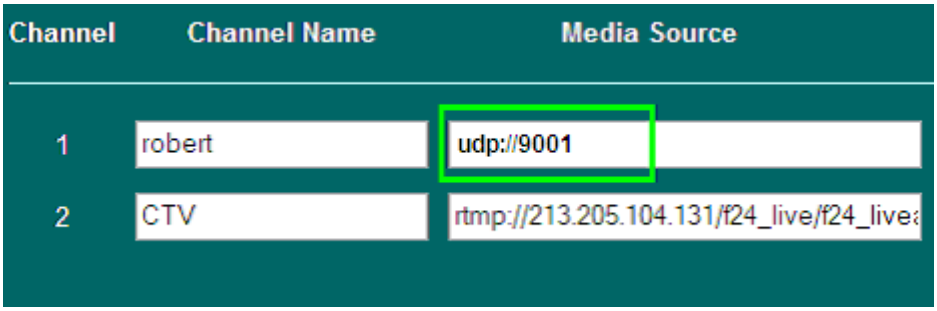


ex.

./ffmpeg -i rtmp://211.23.12.11:1935/live/kid **-preset ultrafast -vcodec libx264 -b 300k -bt 500k -s 720x480 -acodec aac -ar 44100 -ab 128k -strict experimental -f mpegts rtp://192.168.0.8:9001?**pkt_size=1328

Satellite Device to Ezserver

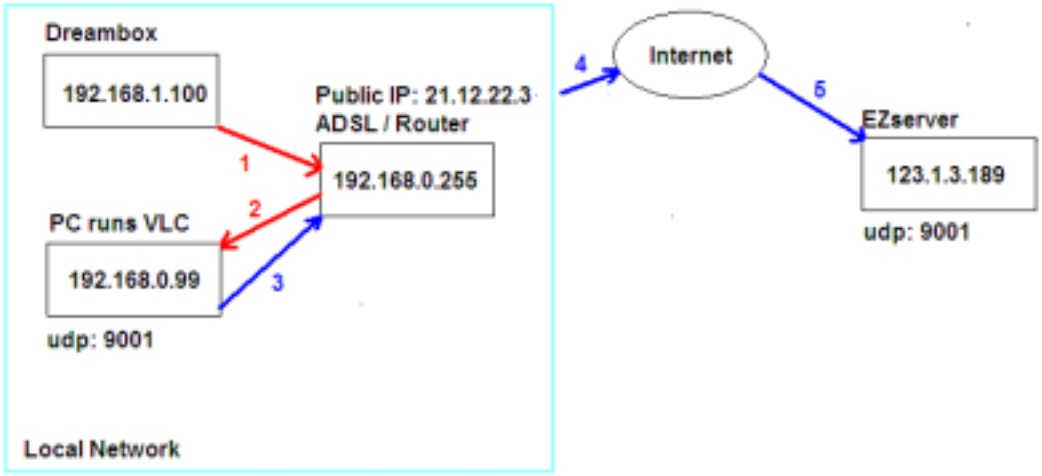
- Dreambox HTTP input and UDP transport Stream Output
  - **Create a new channel with udp port in Meida Source in Channel Window.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **: udp://9001**



  - **Run VLC command to get http stream and transcode it to Ezserver.**
  - **Check Channel Status ON/OFF**

ex.

a. **Ezserver IP: 123.1.3.189**
b. **Dreambox IP is local IP (192.168.1.100)**
c. **VLC PC IP is local IP (192.168.1.99)**
d. **The stream flow is Dreambox->VLC PC->Ezserver.**

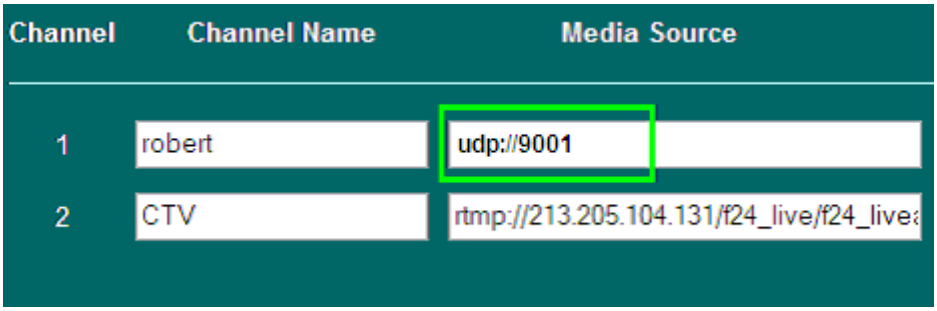


e. **The vlc command is as below:**

```
cvlc -vvv http://192.168.1.100:8001/1:0:1:135:2:1:5F0B1BF:0:0:0: --sout
'#transcode{vcodec=h264,vb=750,fps=24,scale=1,acodec=mp4a,ab=96,channels=2,
samplerate=44100}:udp{dst=123.1.3.189,port=9001,mux=ts}'
```

Multicast Encoder to Ezserver

- Multicast UDP input and UDP transport Stream Output
  - **Create a new channel with udp port in Meida Source in Channel Window.**
  - **The below example defines** Channel Name **:** ***robert*** **and** Medis Source **: udp://9001**



  - **Run VLC command to get multicast udp stream and transcode it to Ezserver.**
  - **Check Channel Status ON/OFF**

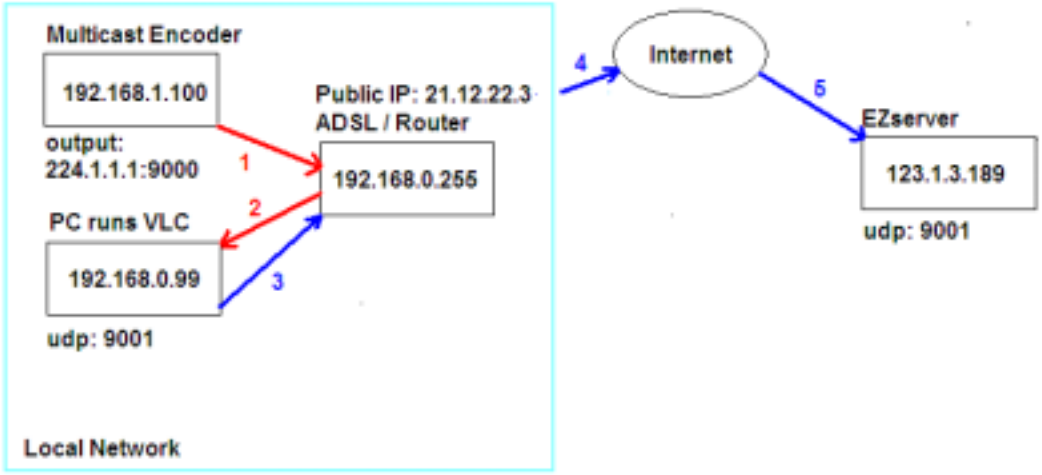
ex.

a. **Ezserver IP: 123.1.3.189**

b. **Multicast Encoder IP is local IP (192.168.1.100)**

c. **VLC PC IP is local IP (192.168.1.99)**

d. **The stream flow is Multicast Encoder->VLC PC->Ezserver.**



e. **The vlc command is as below:**

```
cvlc -vvv udp://224.1.1.1:9000 --sout
'#transcode{vcodec=h264,vb=750,fps=24,scale=1,acodec=mp4a,ab=96,channels=2,
samplerate=44100}:udp{dst=123.1.3.189,port=9001,mux=ts}'
```

9. Video Streaming URL

Streaming URL output

Get Channel and Movie List by one URL:

Get all channels and movies with channel name, movie name, categories and icon.

- Syntax**:**
  - **http://ip_address:port/**getlink**?**username**=xxxx:**password**=xxxx:**type**=xxxx:**content**=xxx**
  - type **has 4 options:** m3u**,** hls**,** rtmp**,** pure
  - content **has 4 options:** master_channel, master_movie**,** movie**,** all.
    - master_channel option gets channel list from current server
    - master_movie option gets movie list from current server
    - other options get channel or movie list from current server and balancer servers

Examples:

Get Channel links:

- http://192.168.0.6:17000/getlink?username=root:password=1234:type=m3u
- http://192.168.0.6:17000/getlink?username=root:password=1234:type=hls
- http://192.168.0.6:17000/getlink?username=root:password=1234:type=rtmp
- http://192.168.0.6:17000/getlink?username=root:password=1234:type=pure
- http://192.168.0.6:17000/getlink?username=root:password=1234:type=pure:content=master_channel

Get Movie links:

- http://192.168.0.6:17000/getlink?username=root:password=1234:type=m3u:content=movie
- http://192.168.0.6:17000/getlink?username=root:password=1234:type=m3u:content=master_movie

Get Channel and Movie links:

- http://192.168.0.6:17000/getlink?username=root:password=1234:type=m3u:content=all

HTTP output URL by channel name:

Syntax1: http://ip_address:port/channel_name?u=xxxx:p=xxxx

Syntax2: http://username:password@ip_address:port/channel_name

Syntax3: http://username:password@ip_address:port/channel_name.m3u8

http://172.16.10.50:8000/robert?u= test:p=1234

http://test:1234@172.16.10.50:8000/robert

http://test:1234@172.16.10.50:8000/robert.m3u8

Note: for some players as vlc, need to replace blank space inside channel name by %20

http://test:1234@172.16.10.50:8000/NBC**%20**SPORT**%20**NEWS

HTTP output URL by channel no.:

Syntax1: http://ip_address:port/x.ch?u=xxxx:p=xxxx

Syntax2: for secure way: http://ip_address:port/x.ch?token=x.xxxxxx,x.xxxxxx (token is creates by Ezserver API: createtoken or createtokebase64)

Syntax3: http://username:password@ip_address:port/x.ch

Syntax4: for HLS Streaming: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx

Syntax5: http://username:password@ip_address:port/chx.m3u8

Syntax6: for ts transcoder: http://ip_address:port/x.ch?u=xxxx:p=xxxx:muxer=ts

Syntax7: for flv transcoder: http://ip_address:port/x.ch?u=xxxx:p=xxxx:muxer=flv

http://172.16.10.50:8000/1.ch?u=test:p=1234

http://172.16.10.50:8000/1.ch? Token=0.300000,0.576543

http://test:1234@172.16.10.50:8000/1.ch

http://172.16.10.50:8000/ch1.m3u8?u=test:p=1234

http://test:1234@172.16.10.50:8000/ch1.m3u8

http://172.16.10.50:8000/1.ch?u= test:p=1234:muxer=ts

http://172.16.10.50:8000/1.ch?u= test:p=1234:muxer=flv

HTTP output URL by movie name:

Syntax1: http://ip_address:port/movie_name?u=xxxx:p=xxxx

Syntax2: http://username:password@ip_address:port/movie_name

http://172.16.10.50:8000/MOVIE1?u=test:p=1234

http://test:1234@172.16.10.50:8000/MOVIE1

HTTP output URL by file name:

Syntax1: http://ip_address:port/movie_path?u=xxxx:p=xxxx

Syntax2: http://username:password@ip_address:port/movie_path

http://172.16.10.50:8000/media/videos/Movie/1.ts?u=test:p=1234

http://172.16.10.50:8000/media/videos/Movie/1.flv?u= test:p=1234

RTMP output URL by channel name:

Syntax: rtmp://ip_address:port/live/channel_name?u=xxxx:p=xxxx

rtmp://172.16.10.50/live/TV1?u=test:p=1234

RTMP output URL by channel no.:

Syntax: rtmp://ip_address:port/live/x.ch?u=xxxx:p=xxxx

rtmp://172.16.10.50/live/1.ch?u=test:p=1234

Depredated URL:

- Channel Syntax:
  - http://ip_address:port/server/get_user_chlist?username=xxxx:password=xxxx:ch_list_type=m3u
  - http://ip_address:port/server/get_user_chlist?username=xxxx:password=xxxx:ch_list_type=m3u8

Examples:

  - http://192.168.0.8:17000/get.php?username=test:password=1234
  - http://192.168.0.8:17000/server/get_user_chlist?username=test:password=1234:ch_list_type=m3u
  - http://192.168.0.8:17000/server/get_user_chlist?username=test:password=1234:ch_list_type=m3u8

- Movie Syntax:
  - http://ip_address:port/server/get_user_movielist?username=xxxx:password=xxxx:movie_list_type=m3u

Examples:

  - http://192.168.0.8:17000/server/get_user_movielist?username=test:password=1234:movie_list_type=m3u

- Channel and Movie Syntax:
  - http://ip_address:port/server/get_user_videolist?username=xxxx:password=xxxx:video_list_type=m3u
  - http://ip_address:port/server/get_user_videolist?username=xxxx:password=xxxx:video_list_type=m3u8

Examples:

  - http://192.168.0.8:17000/server/get_user_videolist?username=test:password=1234:video_list_type=m3u
  - http://192.168.0.8:17000/server/get_user_videolist?username=test:password=1234:video_list_type=m3u8

RTSP Channel URL:

rtsp://172.16.10.50:5544/1.ch?u=test:p=1234

A. RTSP Movie URL:

rtsp://172.16.10.50:5544/media/videos/Movie/1.ts?u=test:p=1234

10. Restream Videos among Ezservers

Ezserver uses http protocol to restream mpeg ts channels and rtmp protocol to restream rtmp channels among Ezservers.

The syntax of Media Source **of ezserver channels for Master Ezserver Channel1 is as below:**

http://userid:password@master_ezserver:portno/1.ch

rtmp://master_ezserver/live/1.ch?u=userid:p=password

For example, there are 3 x ezservers in the net,

- **1st ezserver**
  - **ip: 192.168.0.1, port: 7000, has 3 channels**
  - **user id: robert, password: 1234 and his connections of group is 3**
- **2nd ezserver**
  - **ip: 192.168.0.2, port 8000 has 2 channels**
  - **user id: susan, password: 1234 and his connections of group is 2**
- **3rd ezserver**
  - **ip: 192.168.0.3, port 9000 has 5 channels.**

If 3rd ezserver wants get videos from 1st and 2nd ezserver, then its channel media sources as below:

Channel	Channel Name	Media Source
1	1st EZserver CH1	http://robert:1234@192.168.0.1/1.ch
2	1st EZserver CH2	http://robert:1234@192.168.0.1/2.ch
3	1st EZserver CH3	http://robert:1234@192.168.0.1/3.ch
4	2nd EZserver CH1	http://susan:1234@192.168.0.2/1.ch
5	2nd EZserver CH2	http://susan:1234@192.168.0.2/2.ch

11. Multicast Stream to Internet

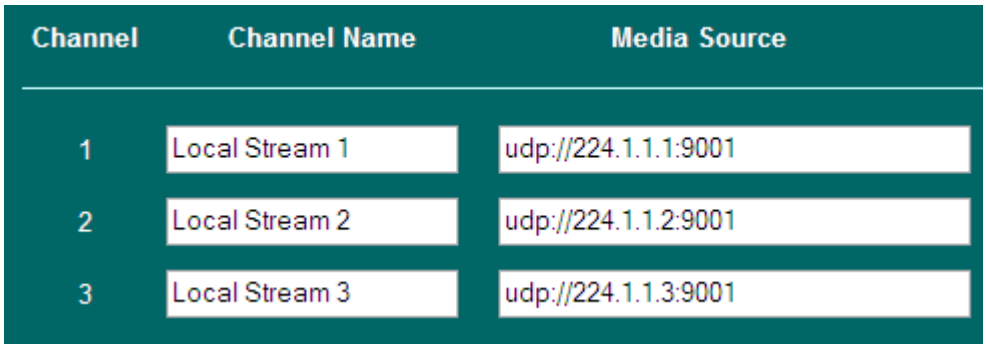
When you have multicast steams from an encoder in Local LAN and you would like to send them to Internet Ezserver in dedicated or VPS server. Please follow the below steps:

1. **Install a local Ezserver with public IP to get all local multicast Streams.**
2. **Input the local Ezserver channels into Internet Ezserver by http protocol.**

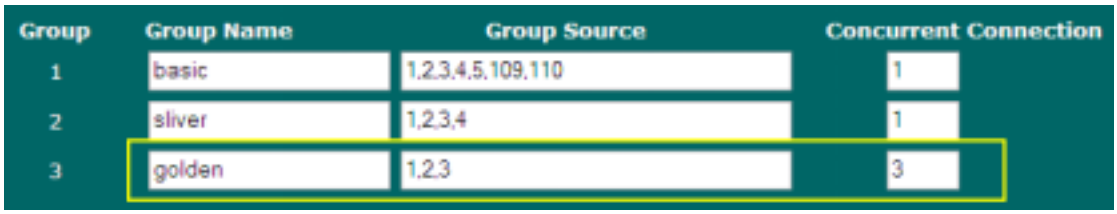
For example:

1. **An encoder can stream multicast videos by 224.1.1.1:9001, 224.1.1.2:9001 and 224.1.1.3:9001.**
2. **A local Ezserver with public IP : 189.1.99.4, HTTP port : 9000**

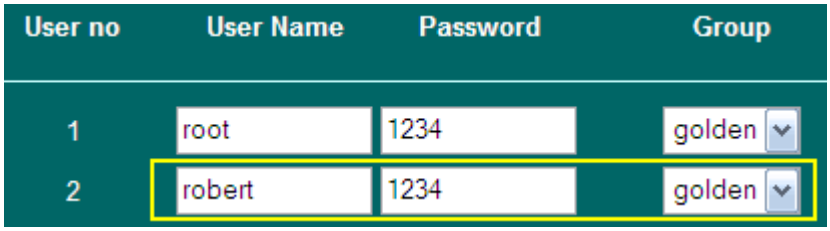
   a. Input the mulicast IP and port into Media Source as below



b. Set golden group with ch1, ch2, ch3 right and concurrent connection no to 3.



c. Set user: robert to golden group



3. A Internet Ezserver with public IP: 156.19.45.99, HTTP port: 8000

a. Input local Ezserver ch1, ch2 and ch3 into Media Source of Internet Ezserver.

Channel	Channel Name	Media Source
1	Local EZserver CH1	http://robert:1234@189.1.99.4:9000/1.ch
2	Local EZserver CH2	http://robert:1234@189.1.99.4:9000/2.ch
3	Local EZserver CH3	http://robert:1234@189.1.99.4:9000/3.ch

b. Interent Ezserver can provide 3 channels to players

12. Access Authentication

Ezserver supports two methods for video acess authentications as below:

- ***Security-Token String***
- ***URL Query String***

a. Security-Token authentication (Token is created by Ezserver HTTP API)

1. IPTV example:

- http**:/ 172.16.10.50:8000/1.ch?token=128765**
- rtmp**://172.16.10.50:1935 /**live**/1.ch?token=128765**

2. VOD example:

- http**://172.16.10.50:8000/media/videos/Movie/1.flv?token=128765**

b. URL Query String

1. IPTV example:

- http**://172.16.10.50:8000/1.ch?u=test&p=1234**
- http**://172.16.10.50:8000/1.ch?u=test:p=1234**
- rtmp**://172.16.10.50:1935 /**live**/1.ch?u=test:p=1234**
- rtsp**://172.16.10.50:5544/1.ch?u=test:p=1234**

. 2. VOD example:

- http**://172.16.10.50:8000/media/videos/Movie/1.flv?u=test:p=1234**
- rtsp**://172.16.10.50:5544/media/videos/Movie/1.ts?u=test:p=1234**

13. HTML Access Protection

HTML Access Protection **allows per-directory access control requiring a username or groupname to access the content. It defines them in a xml file that is stored in ezserver_enterprise /security/folder_access.xml that has 3 tags, <folder>, <userid> and <group>. It can define the folder accessed by a user or by a group.**

1. Example

```
<?xml version="1.0" encoding="iso-8859-1" ?>
<folder>admin</folder>
<userid>root</userid>
<folder>security</folder>
<userid>root</userid>
<folder>users</folder>
<userid>root</userid>
<folder>middleware</folder>
<group>golden</group>
<folder>middleware</folder>
<group>basic</group>
```

14. Country Filter

Country Filter is to filter all players by Countries to access video from Ezserver.

Country Filter defines them in a xml file that is stored in ezserver_enterprise /security/ security_definition.xml.

1. Example for accepted IP

```
<accepted_country>TAIWAN</accepted_country>
<accepted_country>USA</accepted_country>
<accepted_country>CHINA</accepted_country>
```

* Country Name must be capital and defined in users/user_ip_country.csv

2. Use reload filter button in *Online Player panel* to reload new definition of the xml file.