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Ezserver User Guide

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1. Introduction

Ezserver is a video server receiving live video from UDP, HTTP, RTMP and HLS links, ***recording*** 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. Software Specification

- HTTP / RTMP / HLS / UDP / RTP / input
- HTTP / RTMP / UDP / RTSP / HLS output
- Support H265/HEVC, H264/MPEG4 AVC, MPEG2, AAC/MP3
- Fast Channel Zap Time can be under 0.06 sec.
- Live Video Streaming / Video On Demand / Cache On Demand
- DVR / Delay TV / Catch up TV / EPG
- Unicast / Multicast input
- Unicast / Multicast output
- Support HLS MPEG TS output
- Support RTMP output stream for HTTP/UDP MPEG TS input
- Security Encrypted HLS Channel with AES-128
- Load Balancer for Geo / Bandwidth Limitation
- Support Live Encoder
- Support Apple iOS device, Google Android device, Enigma2 STB, Smart TV and PC
- Channel management / Movie management
- User Management / IP Locking / MAC Address Locking
- Group Management / Concurrent Connection Limitation
- Online Player Management
- Alert Player Management / Restream Detecting and Locking
- EPG Management
- Channel Statistics
- Stream Protection: Player Filter / IP Blocker / Country Filter / MAC ID Protection / Blacklist Management
- Load Balancer
- Reseller Management / Reseller Panel
- Intergration with DASH Transcoder
- Support Adaptive Bitrate Streaming over HTTP
- Integration with Stalker Portal
- Auto Restart on failure, System Log, Statistics
- Support Cache On Demand by a Channel
- Windows : Win XP/Vista, Win 7/8/10, Windows Server 2000/2003/2008/2012
- Linux : Debian / Ubuntu Server / CentOS / Fedora

3. Hardware Requirement

Recommended Minimum Hardware Requirement

- Internet Access: Public Static IP or Domain Name
- Processor: Quad-Core (Intel i7 4970)
- RAM: 16GB
- Network Interface: 1G BASE
- Hard Disk Space: 150MB available space for installation.
- The above specification is for 200 channels and 800 concurrent users.

4. Supported Players

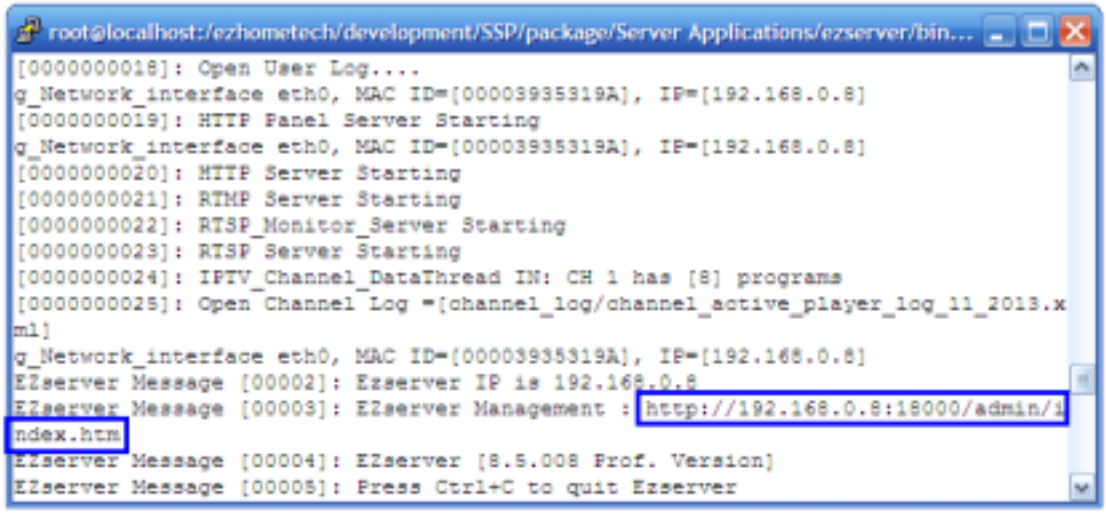
Ezserver supports the below devices and streaming protocol:

- PC VLC, Simple TV and etc…
- Android / iOS Devices with HLS-compatible player
- Ruko Player
- Enigam2 STB
- Mag250 STB

5. Installation

- **Linux Installation :**
  - **chmod 777 install.sh**
  - **./install.sh**
  - send **serial_number.txt to sales@ezhometech.com for license activation.**
  - go to ezserver folder (**ezserver_standard, ezserver_premium, or ezserver_enterprise)** to start or shutdown ezserver.
    - Start Ezserver
      - **./start.sh**
    - Shutdown Ezserver
      - **./shutdown.sh**

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



There are two ways to shutdown ezserver

- Press Ctrl + C keys
- Login Ezserver System Management

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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…

- **Windows Installation** :
  - unzip ezserver zip file (**ezserver_enterprise.zip, ezserver_premium.zip** or **ezserver_standard.zip)**
  - go to ezserver folder (**ezserver_standard, ezserver_premium, or ezserver_enterprise)**
  - double click **Ezserver12.exe**
  - send **serial_number.txt to sales@ezhometech.com for license activation.**
  - click **Action: Open Panel** to open Ezserver panel in a browser.

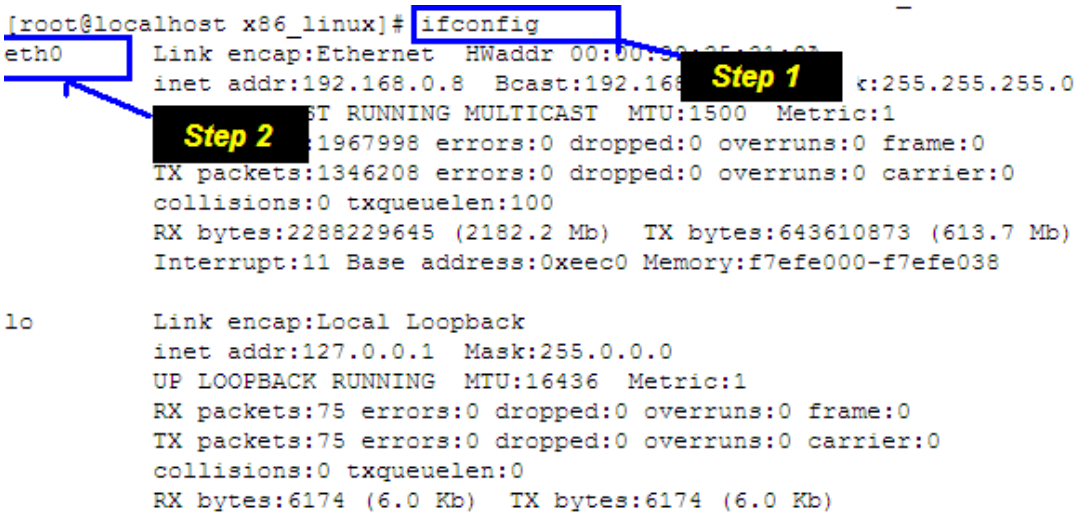
There are two ways to shutdown ezserver

- Select Action:Shutdown
- Login Ezserver System Management

Network Interface for dedicated and VPS Server

The default network interface of Ezserver uses eth0, if the server does not use eth0 or is a Virtual Private Server(VPS), please change the **network_interface value** in **ezserver_config.txt.**

For 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

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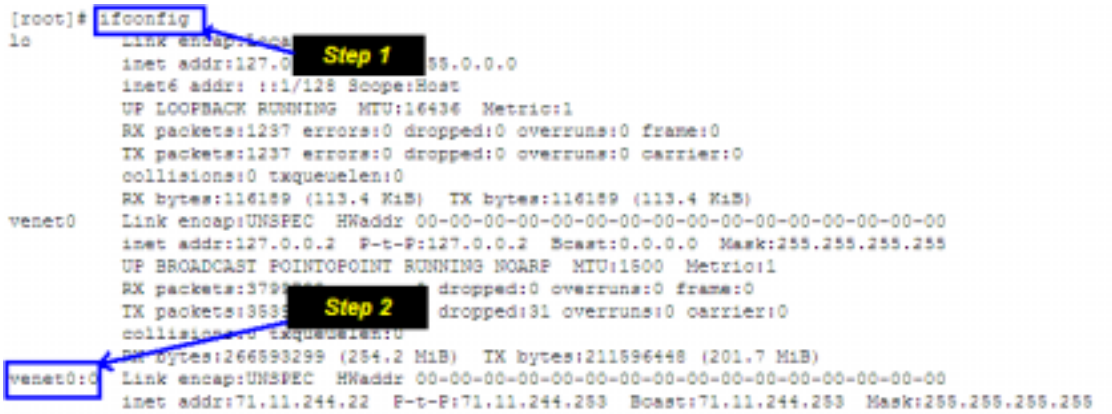
For Virtual Private Server(VPS), Ezserver administrator needs to replace **network_interface=eth0** by **network_interface=venet0:0** of ezserver/ezserver_config.txt for system configuration.



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.**
- ./auto_ezserver.sh

6. Software Update

- For Windows version, go to http://www.ezhometech.com/download.htm to download **ezserver_update.zip**, then extract the files into ezserver_prof folder.

- For Linux version, there are 2 ways to update software. One is to update patch files. The other way is to update the whole folder.

The first way is to run **"patch .sh"** to download patch files and backup the changed files into ezserver_prof folder. The command in Linux ssh console is as below (**recommended**):

Update patch to the latest version.

- **./patch.sh**
- **Input new patch password**

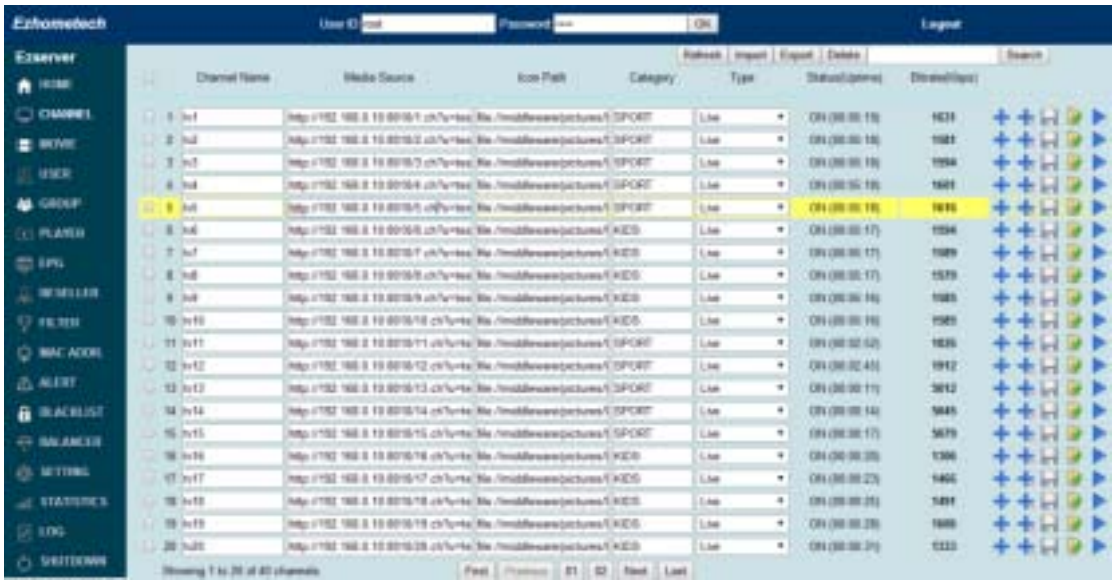
The second way is to run **"update_latest_ezserver.sh"** to backup **ezserver_prof folder** into **ezserver_prof_ddmmyy** folder and download the newest version with the current setting in your server. The command in Linux ssh console is as below:

- **./update_latest_ezserver.sh**
- **Input new patch password**

7. VSPanel

VSPanel is a Video Streaming Panel for Ezserver, please use Internet browser such as *Internet Explore*, *Chrome*, *Firefox* or *Safari* to login VSPanel by the below URL path.

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



VSPanel 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**

Content

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
Export	Export Channel List
Delete	Delete checked channels
Search	Search Channel Name

Button

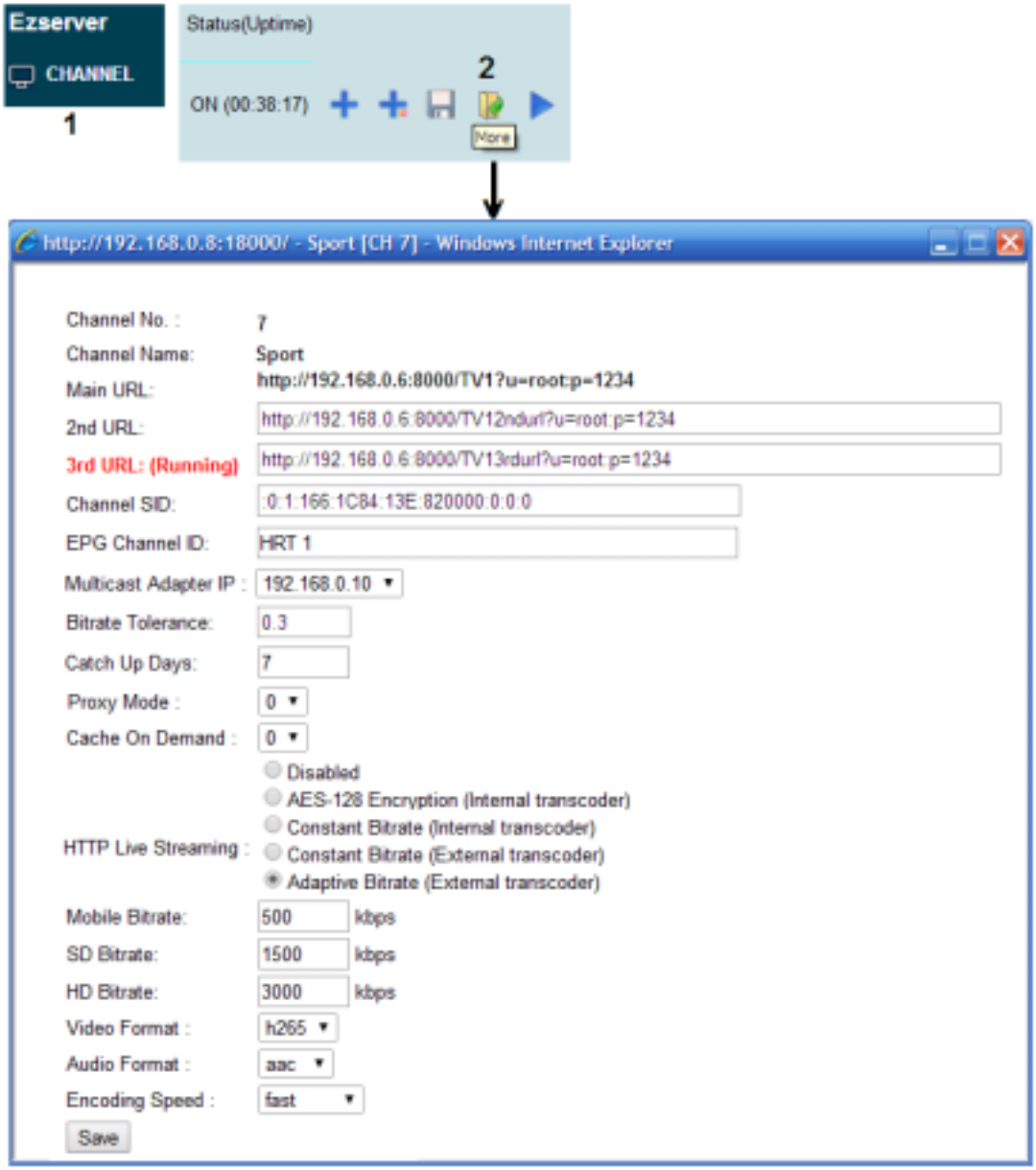
Add	Add a new channel
Copy	Copy 10 channels
Save	Save channel definition
More	More Channel information
Play	Play a channel

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_prof/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_prof/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

- **Channel extra setting**

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.

Movie

Menu Bar

Refresh	Refresh checked movies
Import	Import Movie List from m3u list URL
Export	Export Movie List
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
Play	Play a movie.

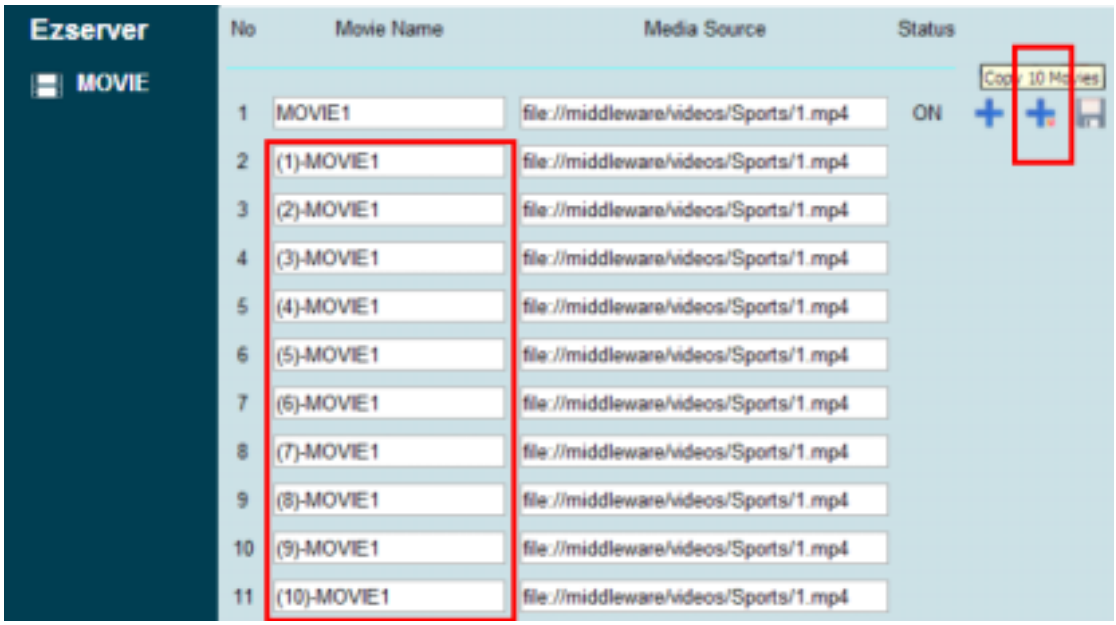
Content

Movie No	N/A
Movie Name	For player inpit 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.ts ◦ 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.

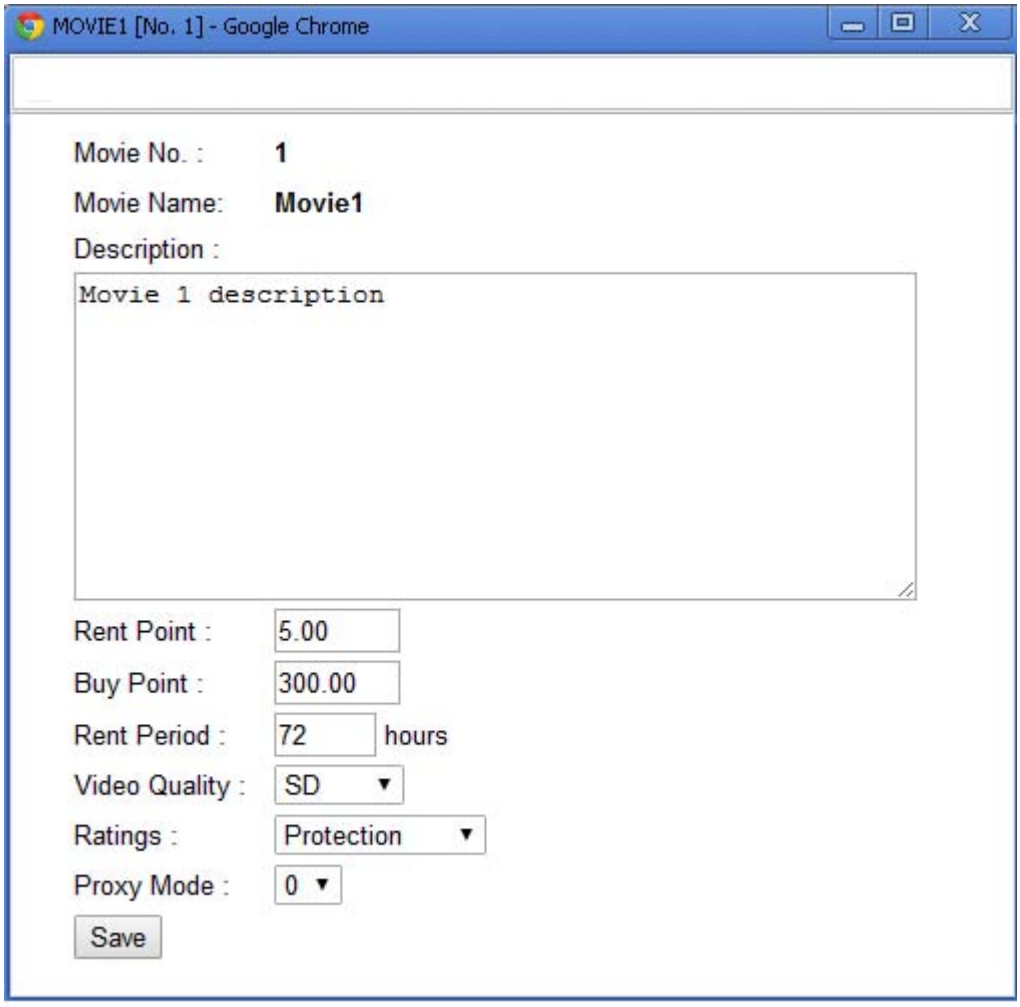
- **Create multiple movies**

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

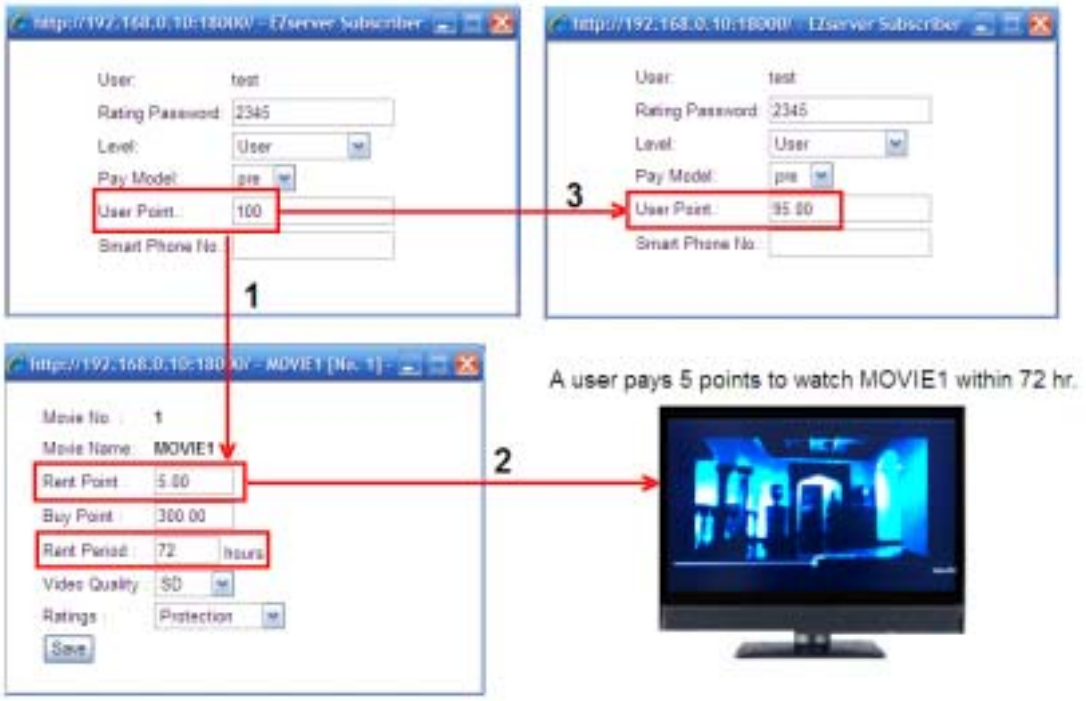


Movie more setting

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



- **Pay Per View Flow**



- **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

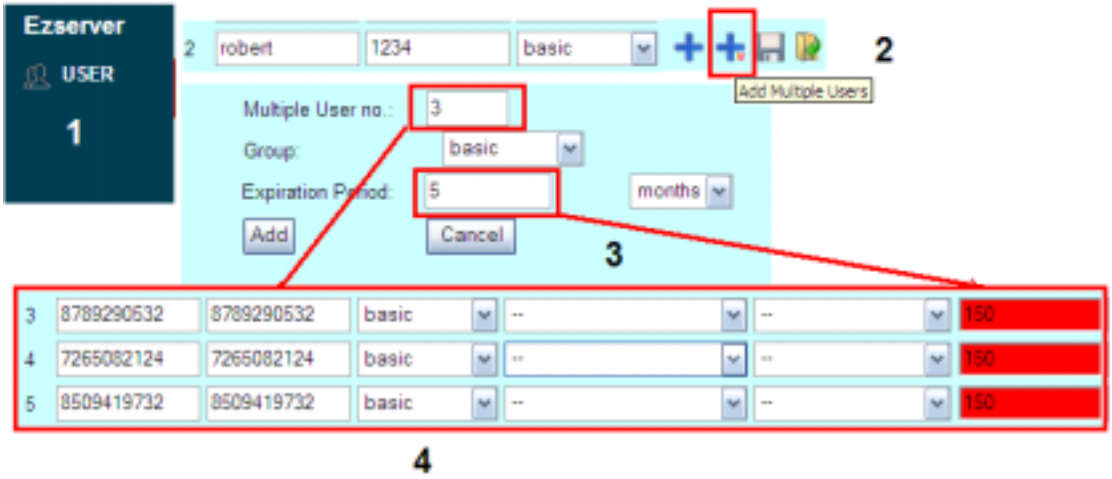
Cut / Paste	Cut / Paste checked users
Export	Export User List
Cleanup	Cleanup Expired Users
Delete	Delete checked users
Search	Search User name

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**”.

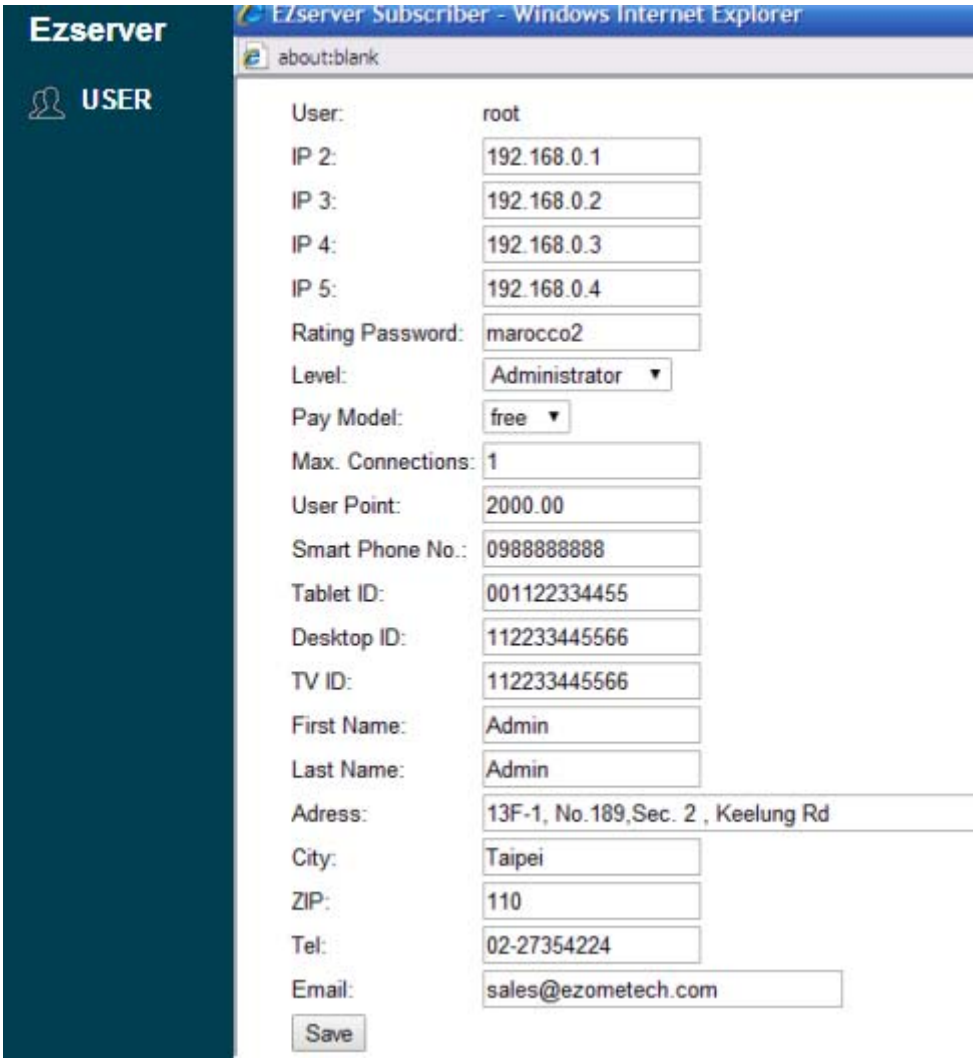
- **Add multiple users**

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



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
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

- **User More window**



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

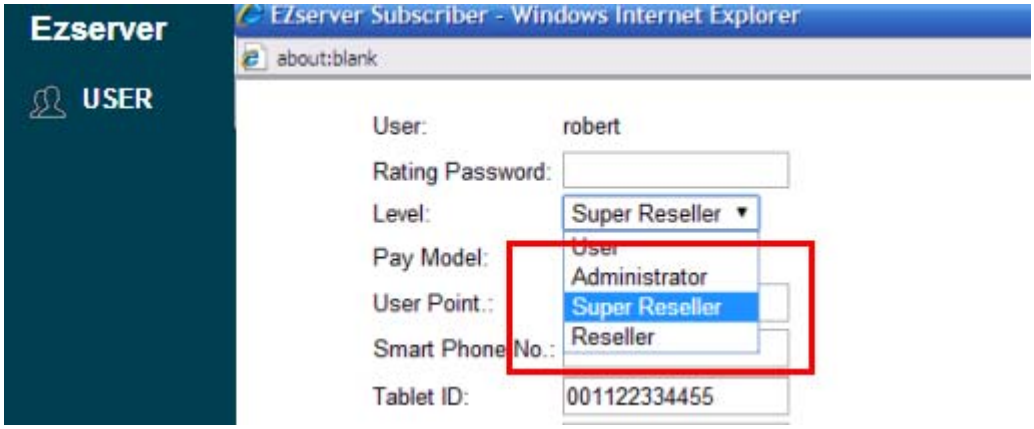
	• **Restreamer** can restream channels without "Alter Player Duration" limitation
Pay Model	Has 3 model: Free, Pre-Paid, Post-Paid for Points
Max. Connection	Max. concurrent connections
User Point	Pay Per View Point
Command	Save

- **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.

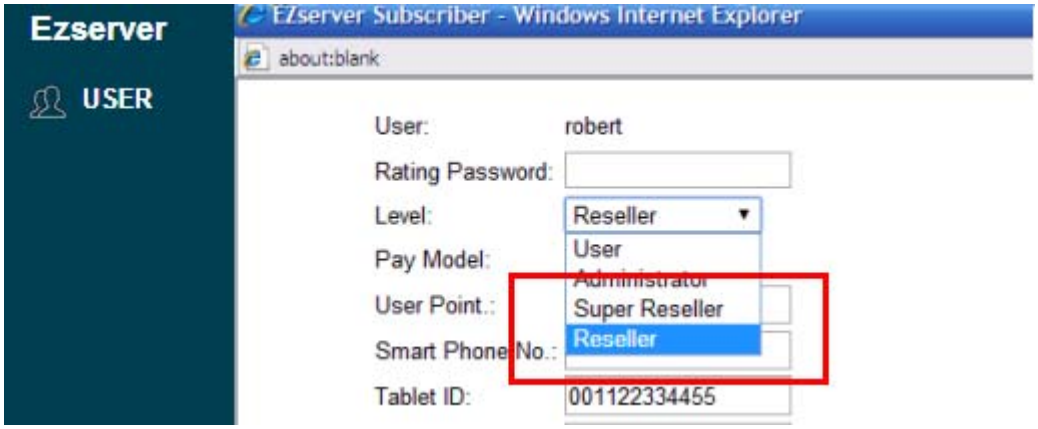
Add a super reseller into user window:

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



Add a reseller into user window:

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



Check him in reseller window.

Menu Bar

Total	The total no of Super Reseller or Reseller

Button

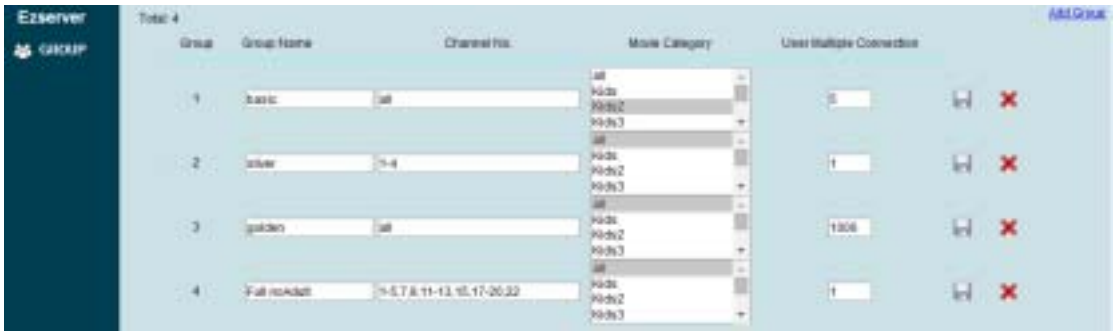
Save	Save Credit items

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	Monthly fee unit. Ex. the monthly fee of a user for watch video is US$5, then its value is 5.
Creator	The person created the reseller.
Type	Super Reseller or Reseller.

- **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.

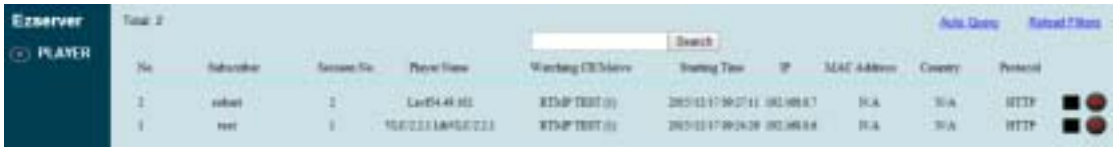


Menu Bar

Total	The total no of Group
Add Group	Add new Group

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

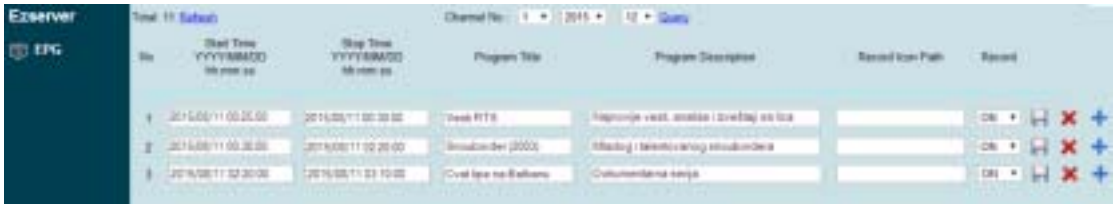
Stop	Stop the player
Block	Stop the player and block it into blacklist

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 Bar

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

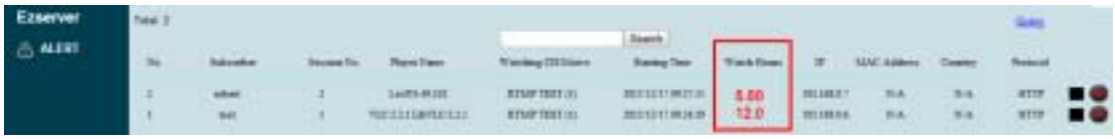
Save	Save Program definition
Add	Add a new program
Del	Delete a program

EPG Content

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

Alert Player



Menu Bar

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

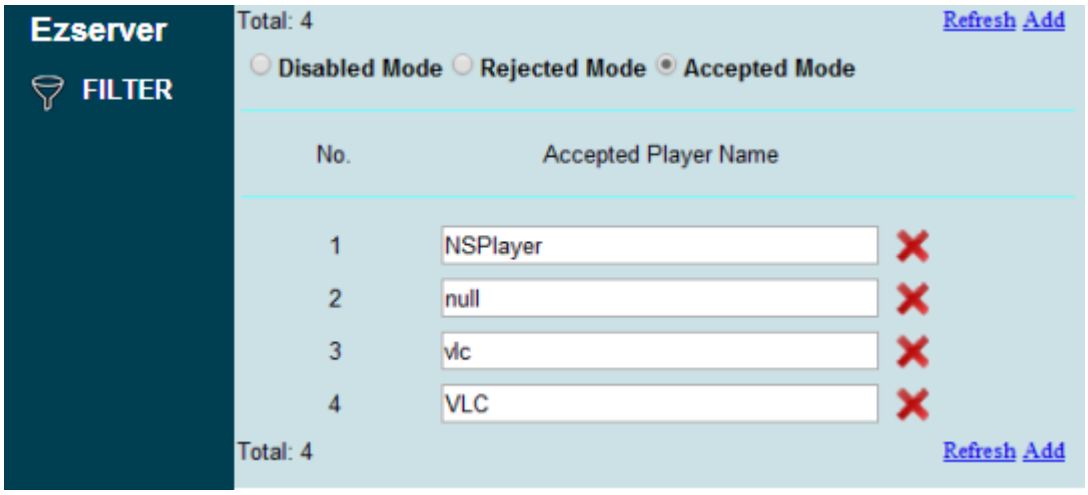
Content

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
- If you need to block and stop players over Watching Hours, you can add **alert_player_blacklist=1** in ezserver_config.txt and restart ezsever.

- **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 Bar

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 Addr.**

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

Menu Bar

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

Button

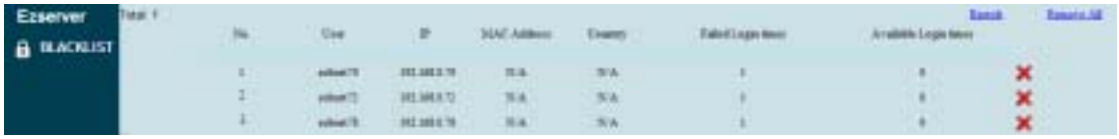
Del	Delete a MAC Address

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 Bar

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

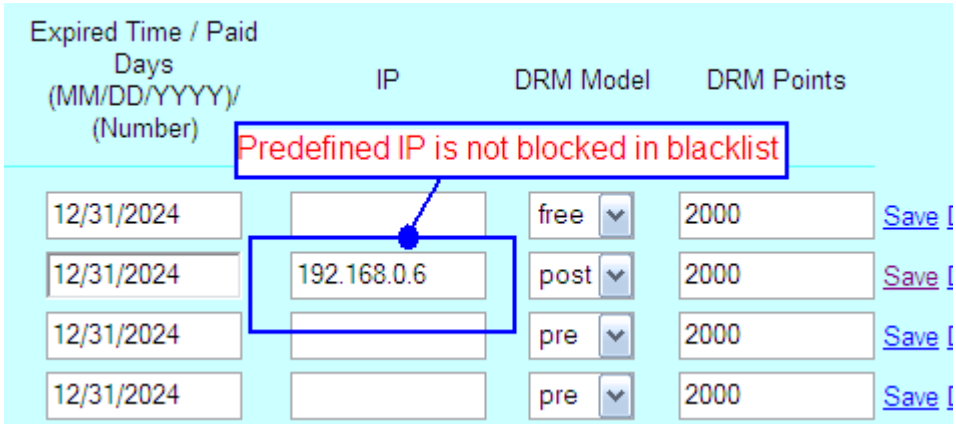
Button

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.



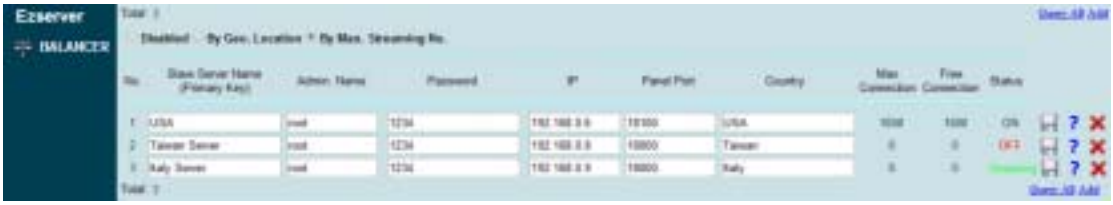
- **Balancer**

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 connection**s, 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 Bar

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**

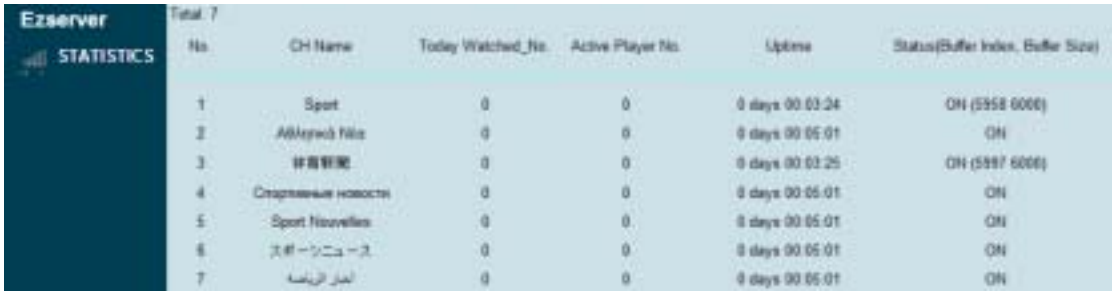
Content

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 Bar

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

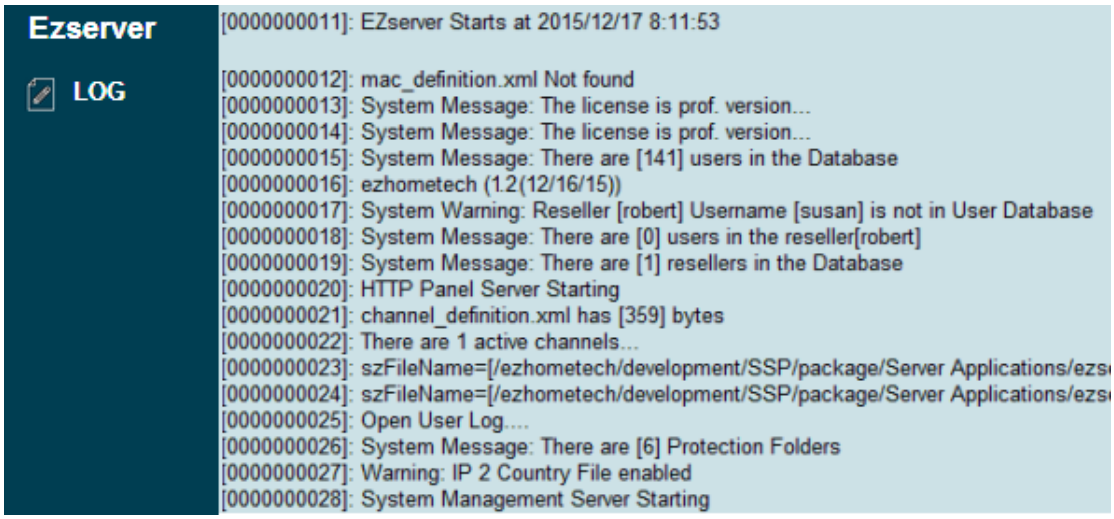
Content

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.

- **Shutdown**


Ezserver
SHUTDOWN
System Information
* ezhometech EZserver
* Version: Release 1.2(06/04/16)
* Serial Number: 076244D61D693281E50708214B438C041
* Start at: 20
* Uptime: 0:0
* Subscriber
* Channel N
* Online Play
* Group No.:
* Blacklist IP No.: 0
Message from webpage
Shutdown EZserver?
確定
取消

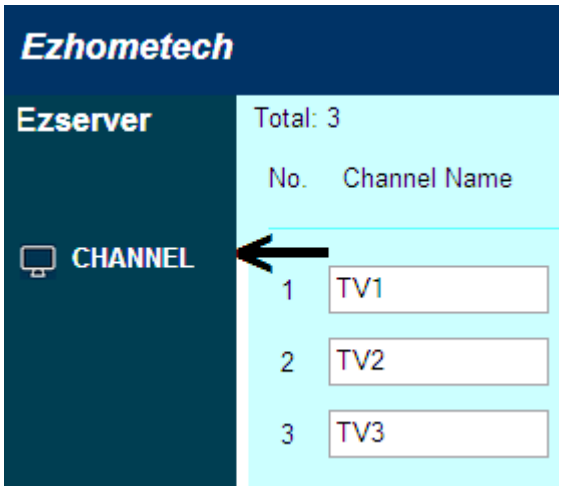
- **Log**


Ezserver
LOG
[0000000011]: EZserver Starts at 2015/12/17 8:11:53
[0000000012]: mac_definition.xml Not found
[0000000013]: System Message: The license is prof. version...
[0000000014]: System Message: The license is prof. version...
[0000000015]: System Message: There are [141] users in the Database
[0000000016]: ezhometech (1.2(12/16/15))
[0000000017]: System Warning: Reseller [robert] Username [susan] is not in User Database
[0000000018]: System Message: There are [0] users in the reseller[robert]
[0000000019]: System Message: There are [1] resellers in the Database
[0000000020]: HTTP Panel Server Starting
[0000000021]: channel_definition.xml has [359] bytes
[0000000022]: There are 1 active channels...
[0000000023]: szFileName=[/ezhometech/development/SSP/package/Server Applications/ezs
[0000000024]: szFileName=[/ezhometech/development/SSP/package/Server Applications/ezs
[0000000025]: Open User Log....
[0000000026]: System Message: There are [6] Protection Folders
[0000000027]: Warning: IP 2 Country File enabled
[0000000028]: System Management Server Starting

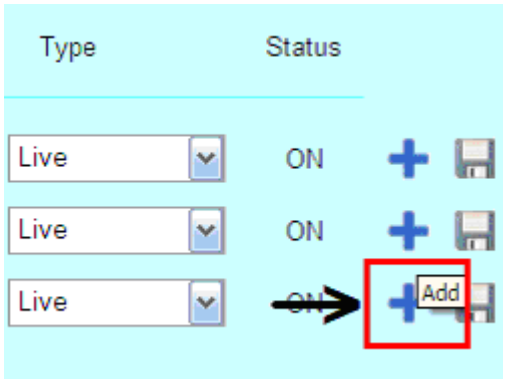
8. Add New Channel

Follow the below steps to add new channel.

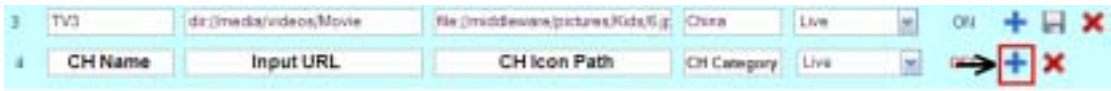
Step1: Click “Channel” Button.



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



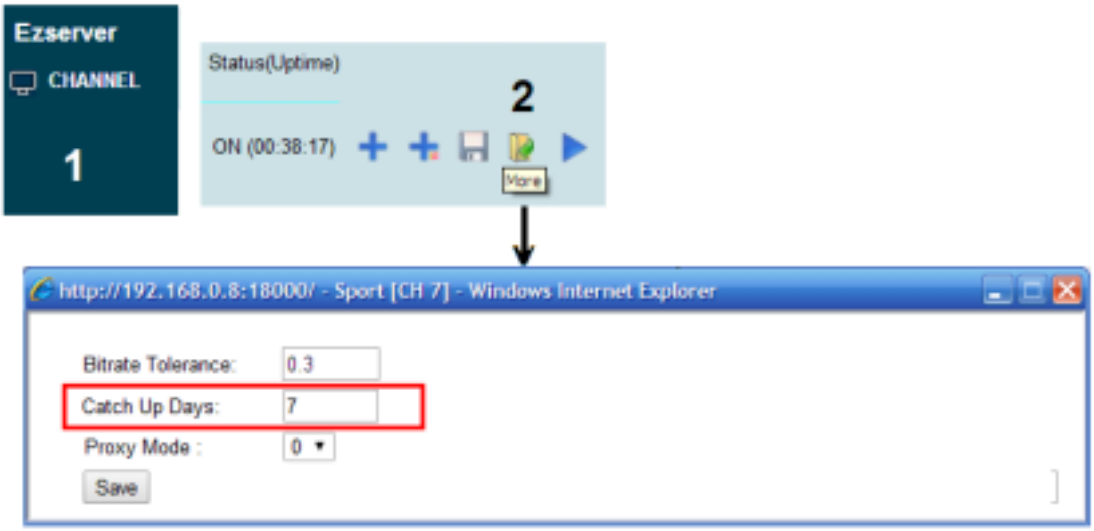
Step3: Input Channel Name, input URL, Channel Icon Path Catalog and Type, then click "**+**" button.



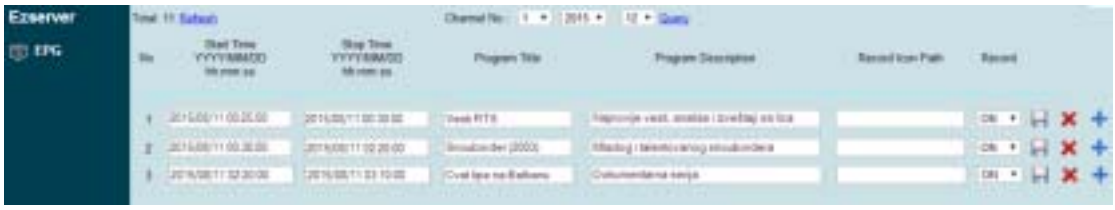
9. Catch up TV

This function is to record live channel into VOD movies by EPG information. Administrator follows up the below steps to enable the live channel record:

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



- 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:

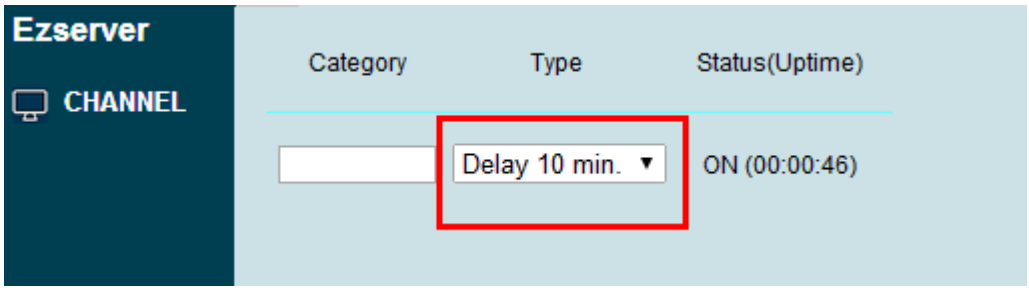
Note: The recorded file is

ezserver_prof/tv_program_archive/2015_05_04/CH0001_10_00.ts

10. Delay TV

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.

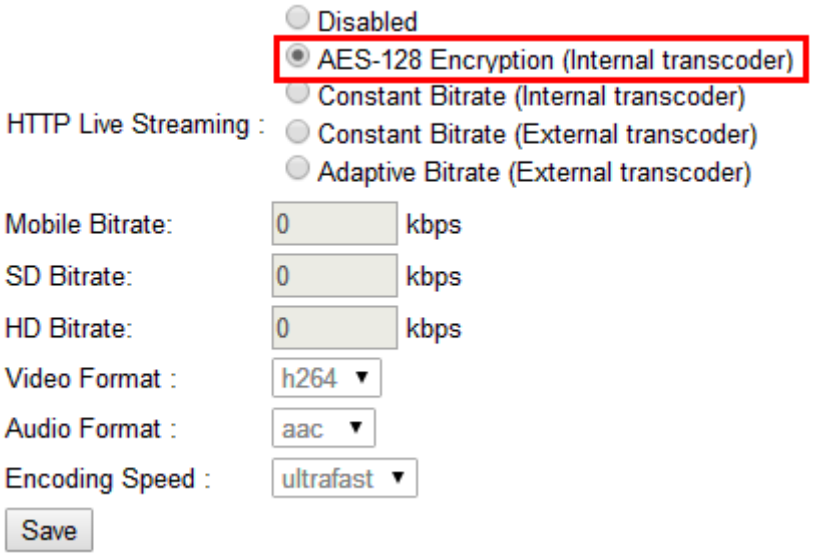


The storage size of per channel depends on video bitrate and delay time. For example,

- Channel video bitrate is **1Mbps** and delay time is **1 hour**, the storage size needs 450M bytes. Ezserver uses **triple space** for one channel, so the total size is **1.35G** 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:

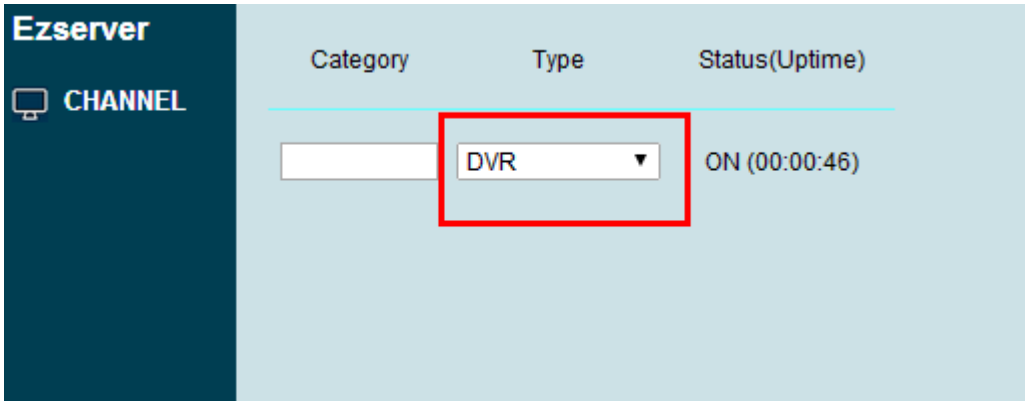
- Click Channel Button and Click More icon
- Select HLS option to **AES-128 Encryption (internal transcoder)**



11. 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.**

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



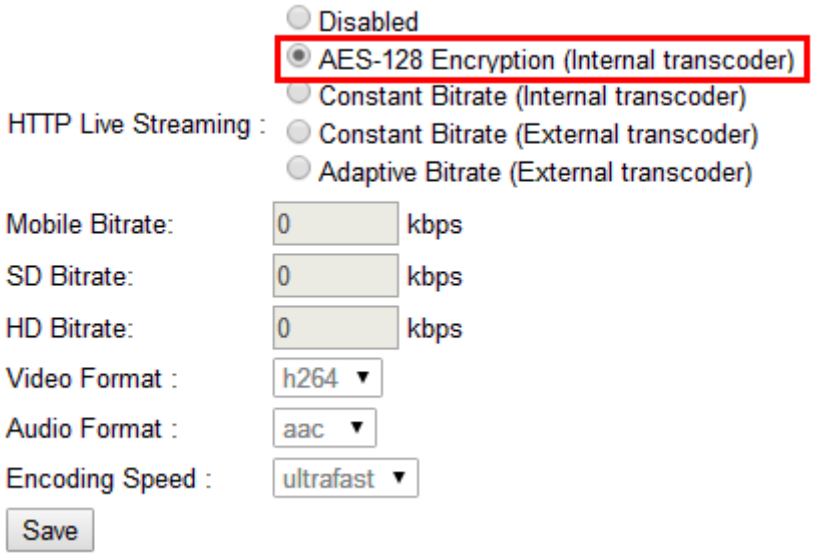
Click Setting button and set DVR Duration, then click Save button.

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

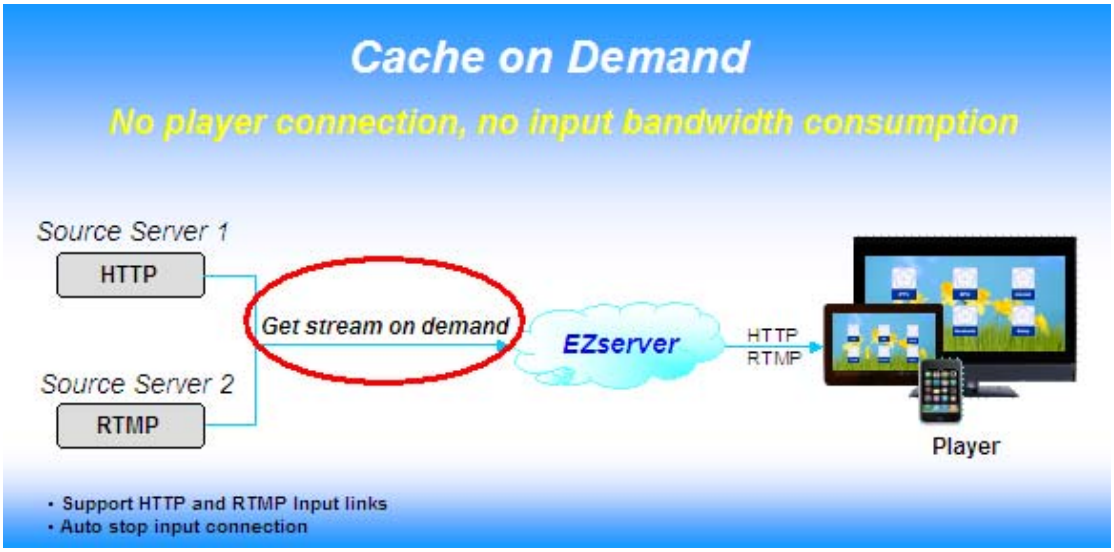
- Channel video bitrate is **1Mbps** and duration is **1 hour**, the storage size needs 450M bytes. Ezserver uses **triple space** for one channel, so the total size is **1.35G** bytes.
- **100** channels, **1Mbps** bitrate, **1-hour** duration, the storage size needs 45G bytes. Ezserver uses triple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

Encrypted Time Shift TV setting:

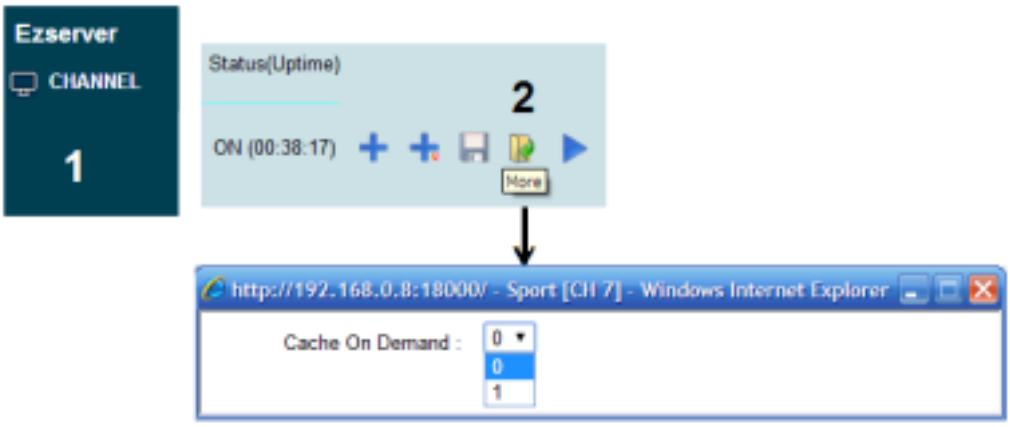
- Click Channel Button and Click More icon
- Select HLS option to **AES-128 Encryption (internal transcoder)**



12. Channel on demand TV



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.

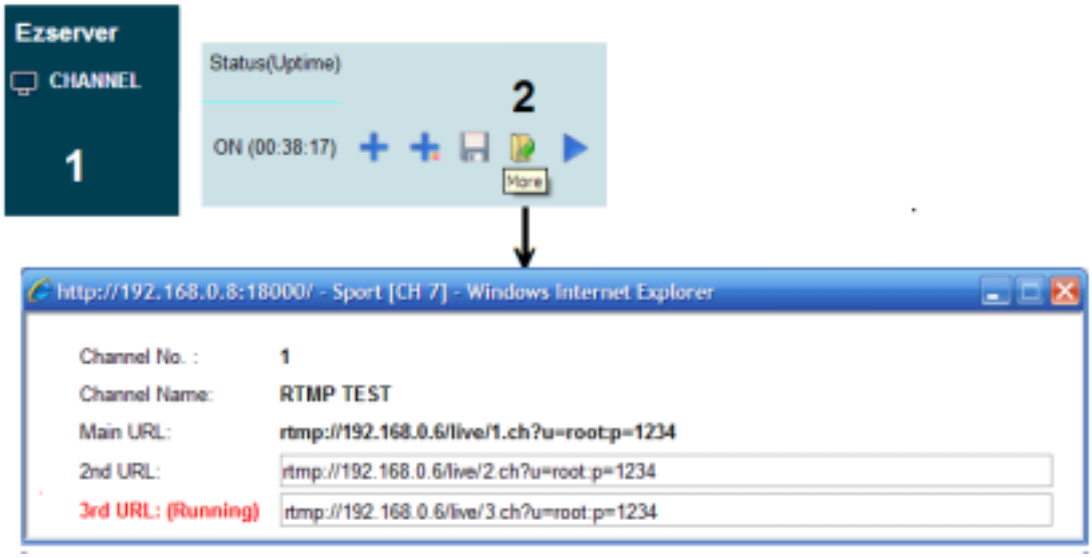
- If its value is 0, ezserver does not stop the connection of input server to get the video into cache memory.

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.

3. Please check more in Ezserver_Internal_File_Structure.pdf

13. Add Channel backup source URLs

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

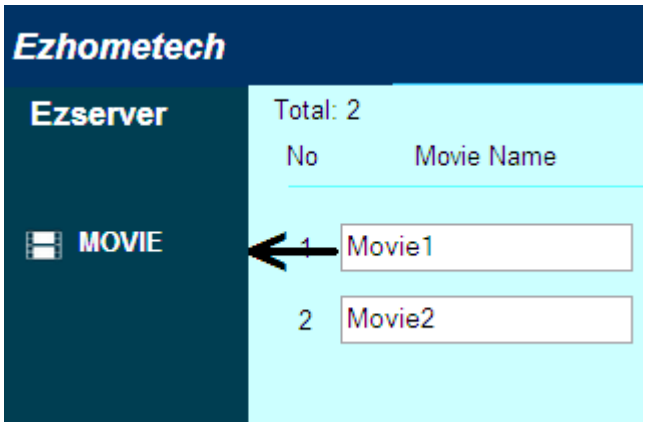


- Click Save Button

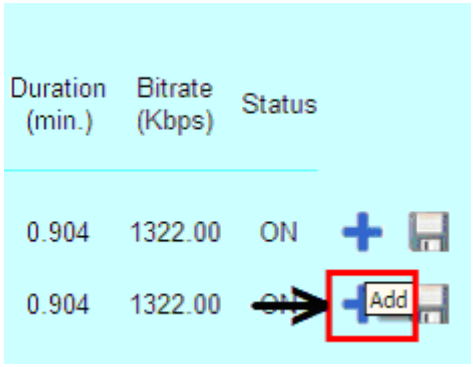
14. Add New Movie

Follow the below steps to add new movie.

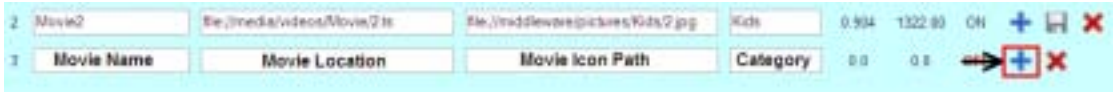
Step1: Click “Movie” Button.



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



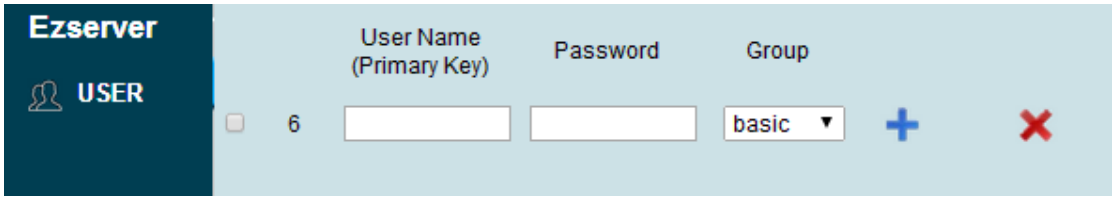
Step3: Input Channel Name, input URL, Channel Icon Path Catalog and Type, then click "**+**" button.



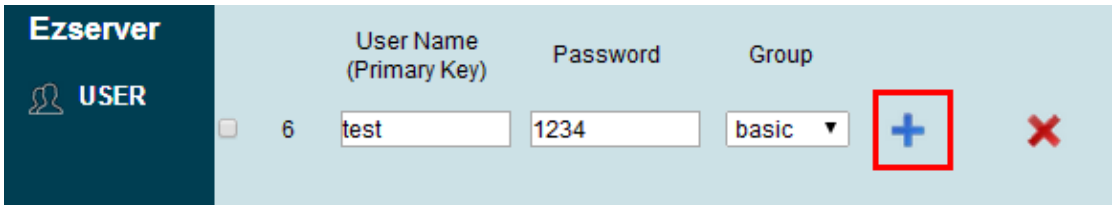
15. Create New User

- Click User button and click **+** button.

- Panel will show the empty user fields

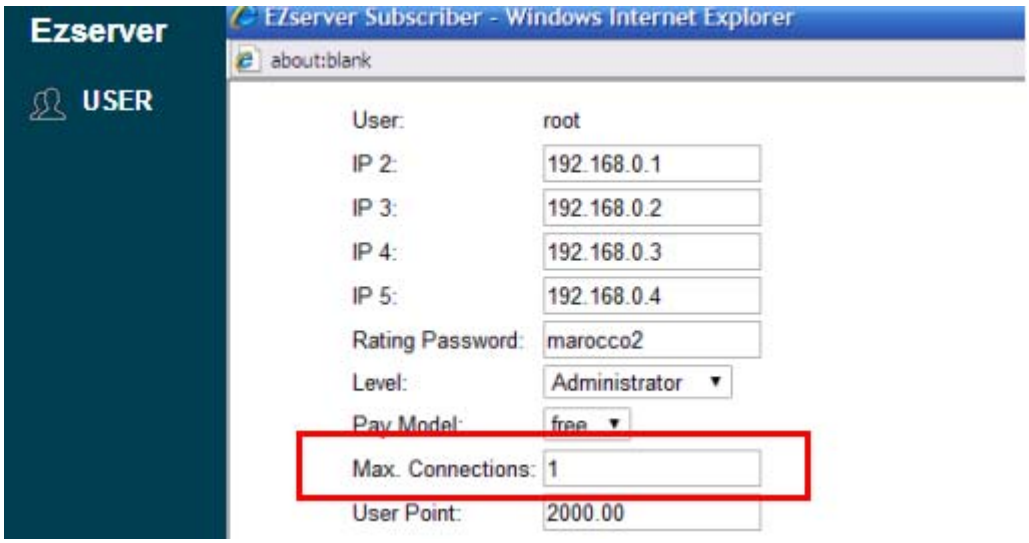


- Input user id, password and etc., then click **+** button to save it



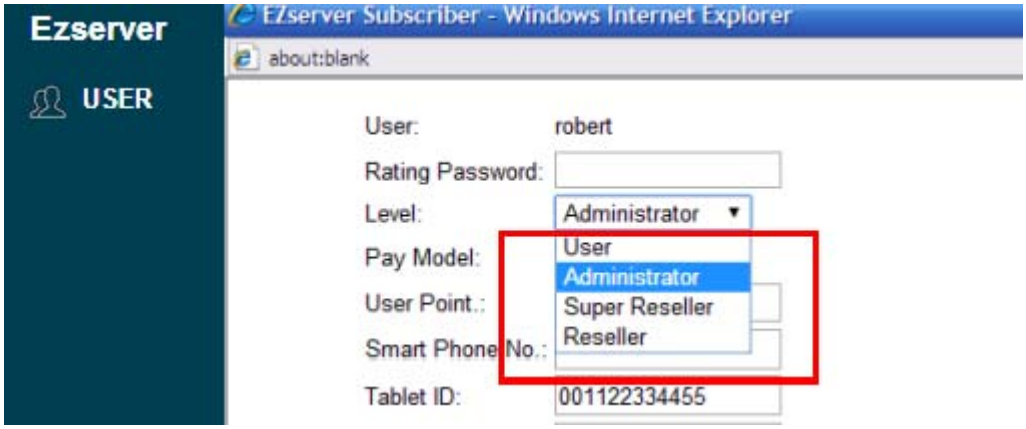
16. User Max. Concurrent Connections

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



17. 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:



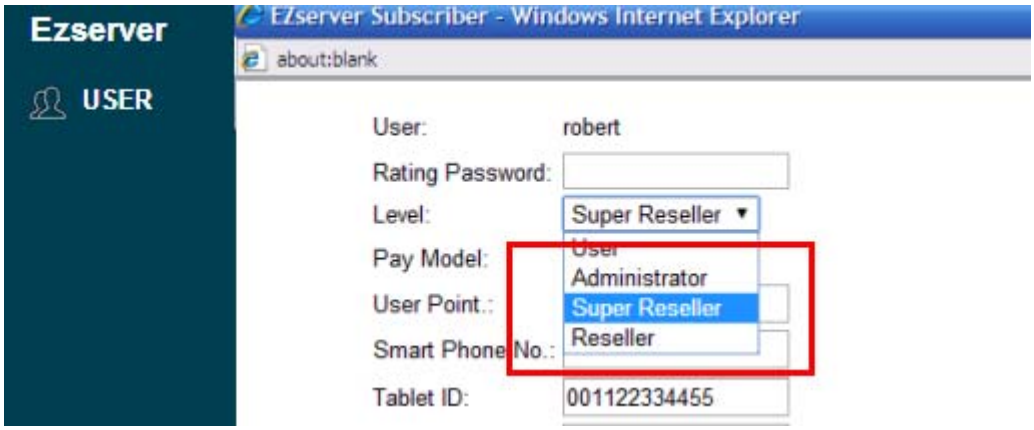
- Administrator can login Ezserver Panel to configure Ezserver via a browser.
- Super Reseller can add resellers and users
- Reseller can add users
- Users can watch channels and movies

18. Create a Reseller

Administrator can a new supper reseller or reseller.

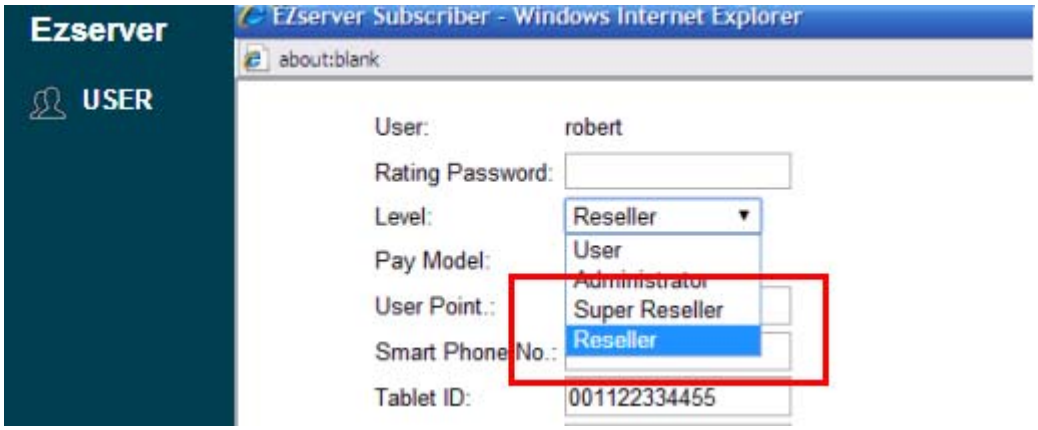
Add a super reseller into user window:

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



Add a reseller into user window:

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



19. Streaming URL output

A. **Get Channel and Movie List from Ezserver**

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

For Ezserver v2.0

- **Syntax**:
  - http://ip_address:port/**getlink**?**username**=xxxx:**password**=xxxx:**type**=xxxx:**content**=xxx
  - **type** has 4 options: **m3u**, **hls**, **rtmp**, **pure**
  - **content** has 2 options: **movie**, **all**

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

Get Movie links:

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

Get Channel and Movie links:

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

For Ezserver v1.2

- **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

B. HTTP Channel 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

Ex.

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

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

Ex.

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

C. HTTP Movie URL:

By Path:

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

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

Ex.

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

By Movie Name:

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

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

Ex.

If movie name of http://172.16.10.50:8000/media/videos/Movie/1.ts?u=test:p=1234 is "MOVIE1", then

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

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

D. RTSP Channel URL:

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

E. RTSP Movie URL:

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

F. RTMP Link Re-Streaming:

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

Syntax2: rtmp://ip_address:port/live/channel_name?u=xxxx:p=xxxx

EX.

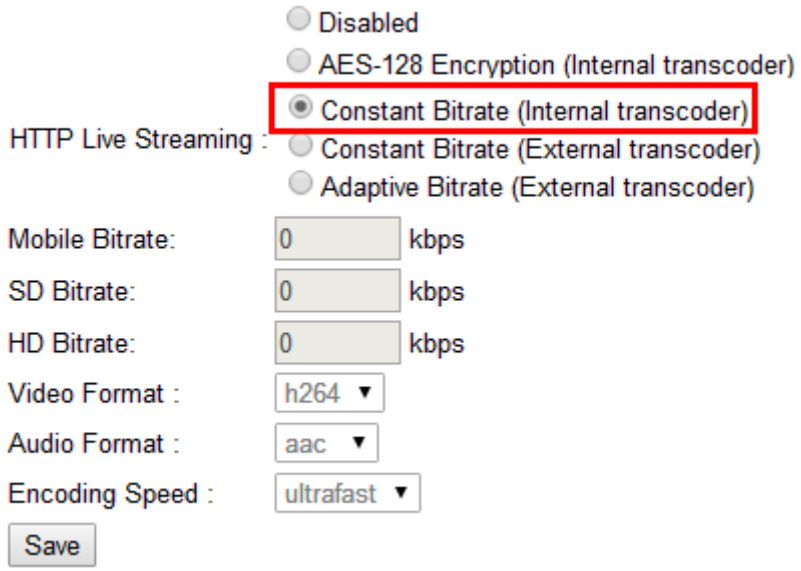
rtmp://172.16.10.50/live/1.ch?u=test:p=1234

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

20. 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

Streaming URL:

- **Single channel:**

  Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx

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

- **All channels:**

  Syntax:

  http://ip_address:port/server/**get_user_chlist**?username=xxxx:password=xxxx

  :ch_list_type=**m3u8**

  Ex.

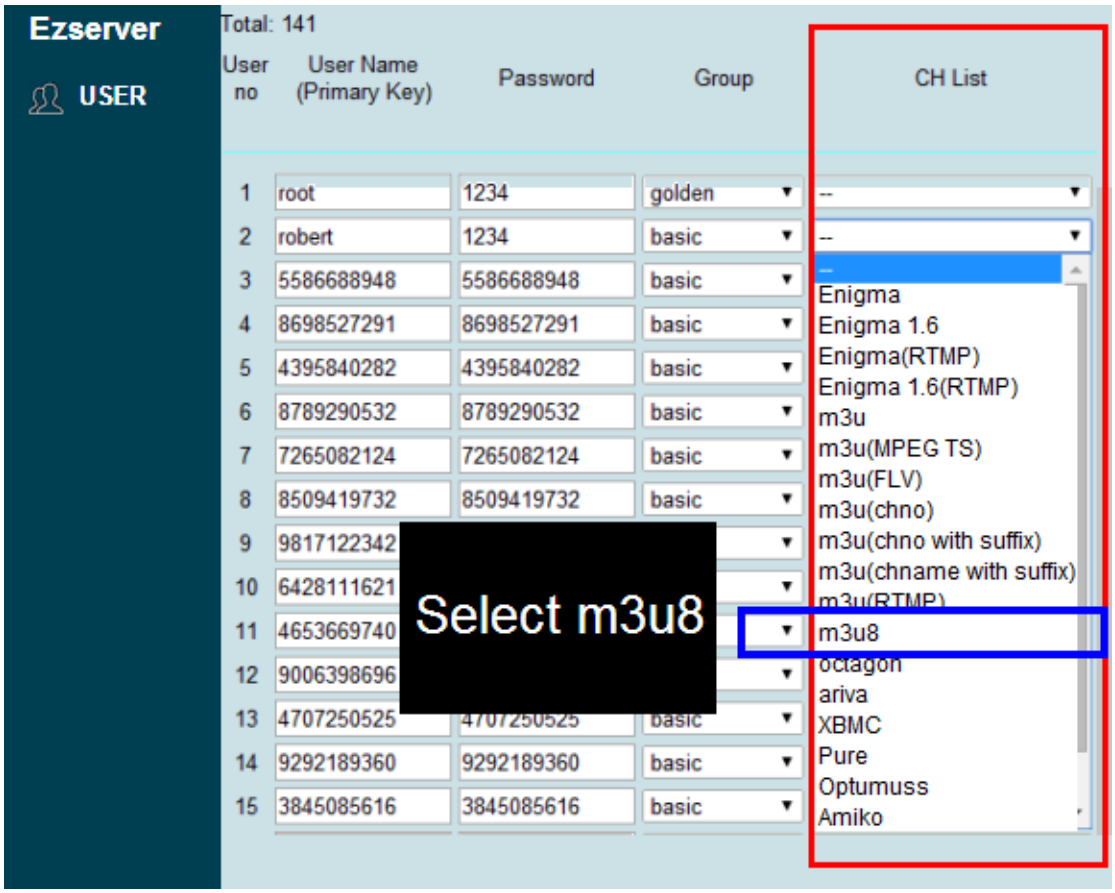
  http://192.168.0.8:17000/server/get_user_chlist?username=test:password=123

  4:ch_list_type=m3u8

Ezhometech

www.ezhometech.com

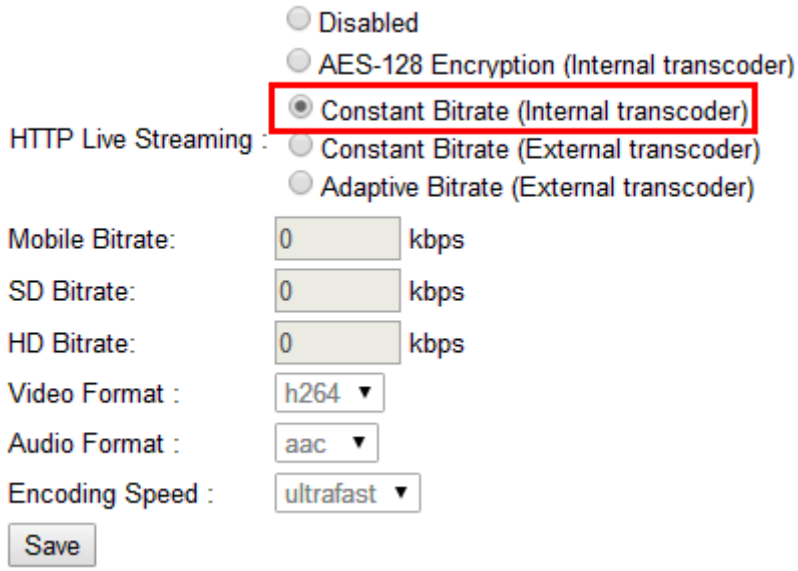
Download m3u8 ch list from panel:



21. HLS Web Player

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

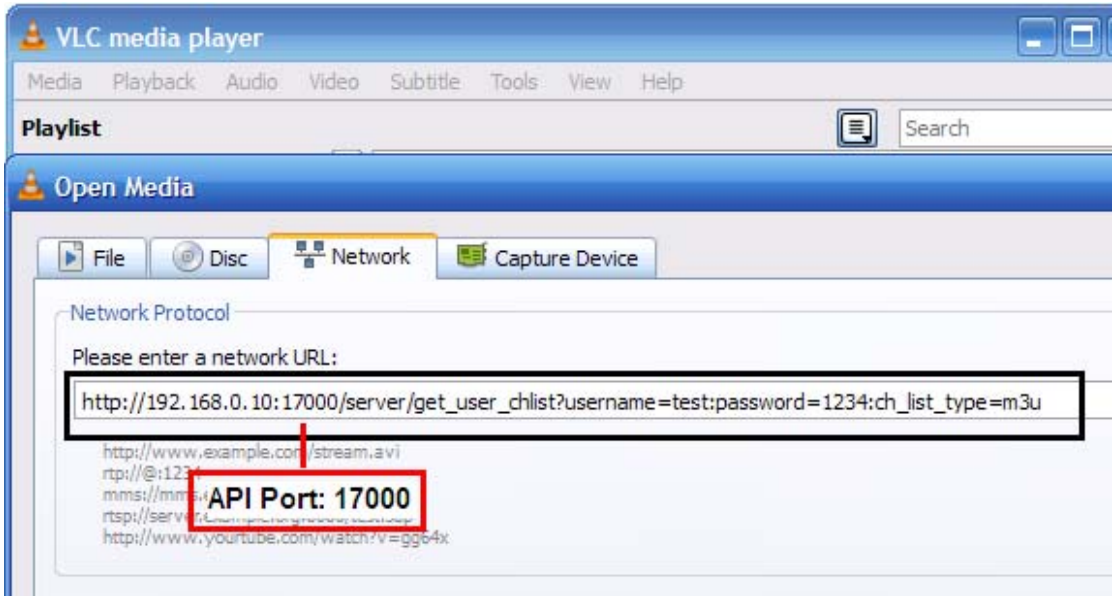
Streaming URL on Web players:

- Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx
- Ex.: **http://192.168.0.10:8000/ch1.m3u8?u=test:p=1234**
- For Safari, directly input the above URL into URL input bar.
- For Chrome, IE, Edge and Firefox, input the below URL into the below links:
  - https://www.hlsplayer.net/
  - http://www.flashls.org/latest/examples/chromeless/

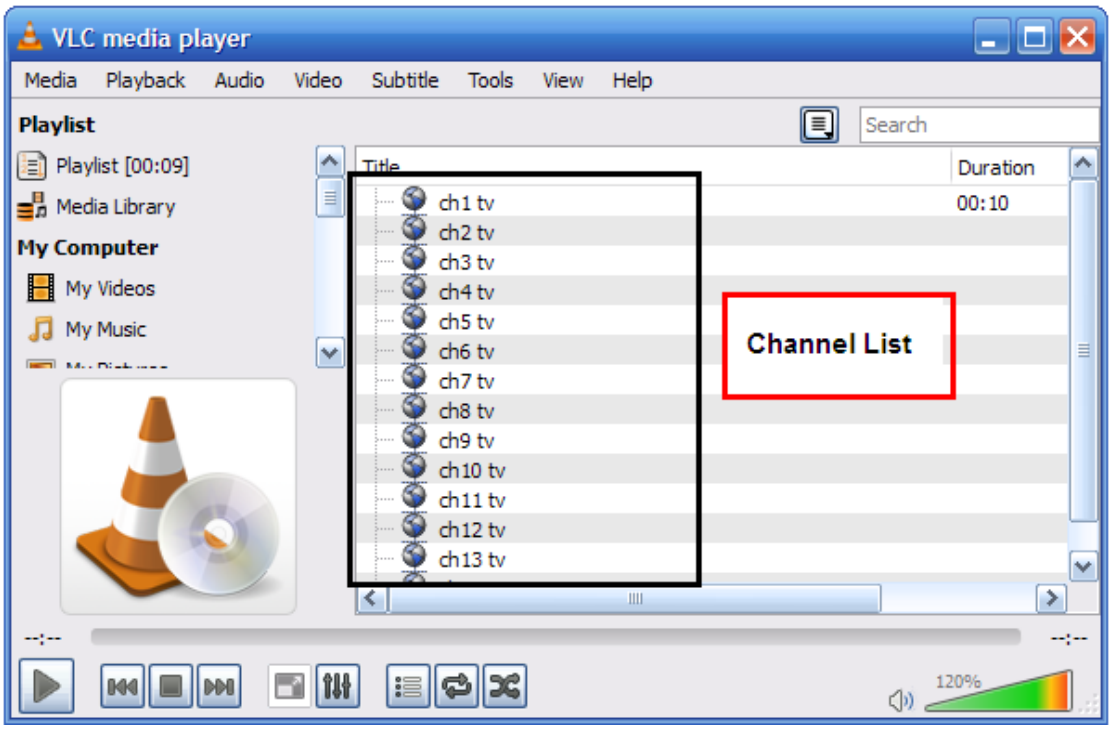
22. VLC Player

Get channel list by Ezserver API with API port(17000), ex.

http://192.168.0.10:17000/server/get_user_chlist?username=test:password=1234:ch_list_type=m3u

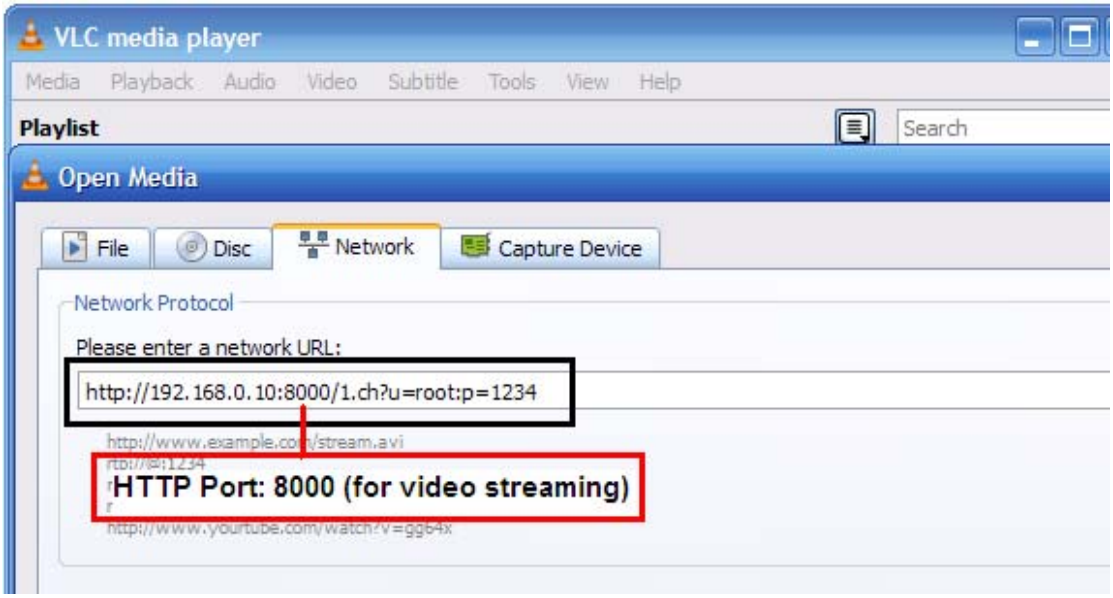


Channel List from Ezserver response:



Play a channel with HTTP port(8000), ex.

http://192.168.0.10:8000/1.ch?u=root:p=1234



More Options are in **Streaming URL output**.

23. iOS devices

Step1: Select **App Store** to install the app of the below links:

- **GSE SMART IPTV**
- **OttPlayer**

Step2: Click "**+**" to add new URL and select "**Add M3U URL**" option. Add the Ezserver M3U URL into the app

Syntax: http://ip_address:api_port/getlink?username=xxxx:password=xxxx:type=m3u

Ex.

http://192.168.0.6:17000/server/getlink?username=test:password=1234:type=m3u

24. Android devices

Refre **Google Play Store**

- **Perfect Player**
  - https://play.google.com/store/apps/details?id=com.niklabs.pp
- **IPTV Player (Online TV)**
  - https://play.google.com/store/apps/details?id=veg.iptv.mediaplayer
- **IPTV**
  - https://play.google.com/store/apps/details?id=ru.iptvremote.android.iptv
- **OttPlayer**
  - https://play.google.com/store/apps/details?id=es.ottplayer.tv

Add the Ezserver M3U URL into the app.

Syntax: Syntax:

http://ip_address:api_port/getlink?username=xxxx:password=xxxx:type=m3u

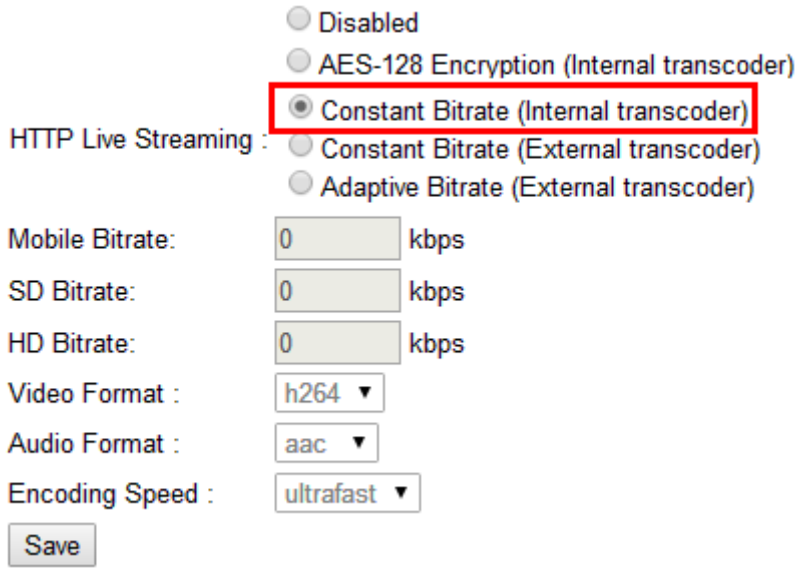
Ex.

http://192.168.0.6:17000/server/getlink?username=test:password=1234:type=m3u

25. Roku player

Step1:

- Administrator sets all channels to HLS type.
- Login Panel
- Click Channel Button and Click More icon
- Select option to **Constant Bitrate (internal transcoder)**



Step2:

- unzip the RokuSDK/examples/zips/simplevideoplayer.zip
- edit the simplevideoplayer/source/appMain.brs as follows:

```
urls = ["http://192.168.0.10:17000/server/get_user_videolist?username=test:password=1234"]
qualities = ["SD"]
StreamFormat = "hls"
srt = ""
title = "Ezserver Test Stream"
```

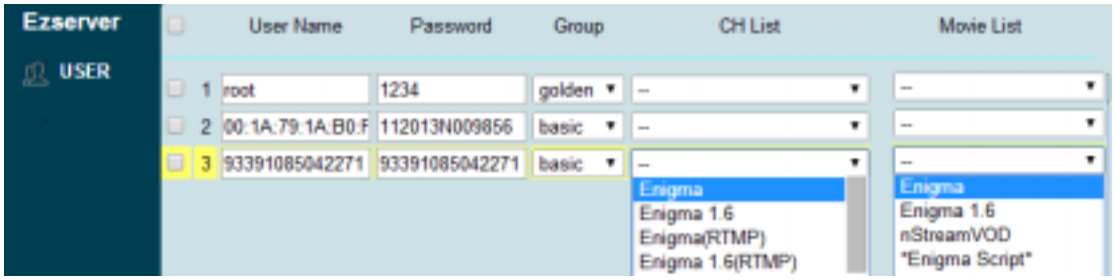
- zip simplevideoplayer folder into simplevideoplayer_ez.zip
- refer "Run the package Utility" instructions
- upload simplevideoplayer_ez.zip
- register your application to the Roku player

26. Enigma STB

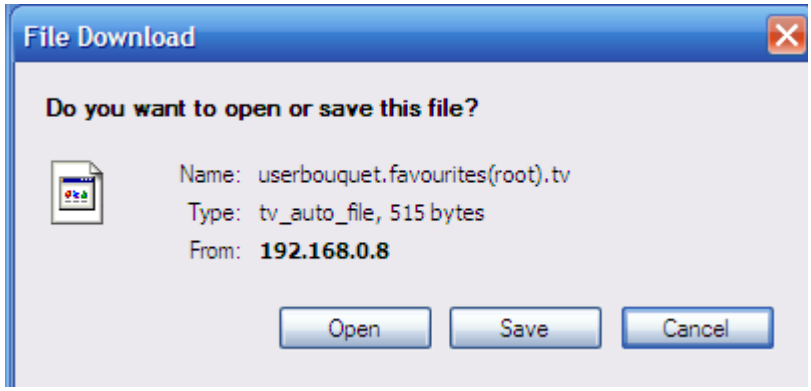
Use **bouquets.tv** to play channels from Ezserver on enigma stb.

A. by bouquets.tv:

- **Download .tv file:**
  - Go to Ezserver Panel to click User Button and select enigma or enigam16 to download it.

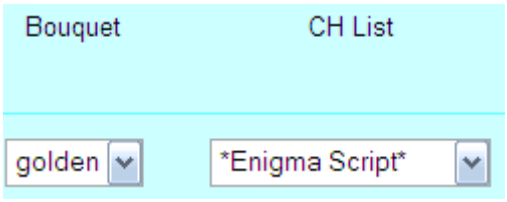


  - Save the .tv file

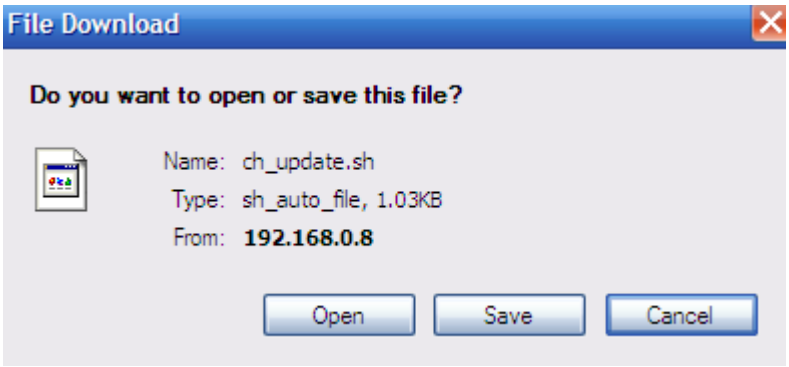


  - Copy the .tv file into /etc/enigma2/ folder

- **Download update script**
  - Select Enigma Script or Enigma16 Script



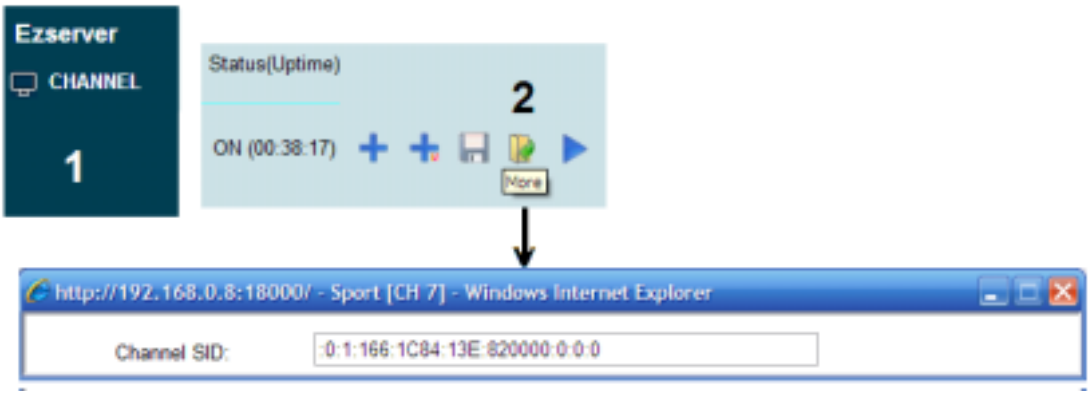
  - Save ch_update.sh



- Copy ch_update.sh into /usr/script
- chmod 777 ch_update.sh
- Create /usr/bin/enigma2_pre_start.sh and add the below line:

/bin/sh /usr/script/ch_update.sh > /dev/null 2>&1 &

- **Set SID for epg:**
  - Login Panel
  - Click Channel Button
  - Click More Buttone of a channel
  - Input Channel SID (ex. **:0:1:13F:157C:13E:820000:0:0:0)**



- Click Save Button.

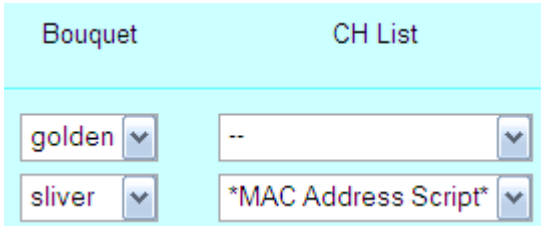
27. Enigma STB by MAC Protection

Ezserver enhances MAC protection with Enigma STB by a Linux script. The script is created by per user in Ezserver Panel and will be stored into enigma stb without any modification in enigma setting. Then Ezserver panel can control all enigma stb for authorization.

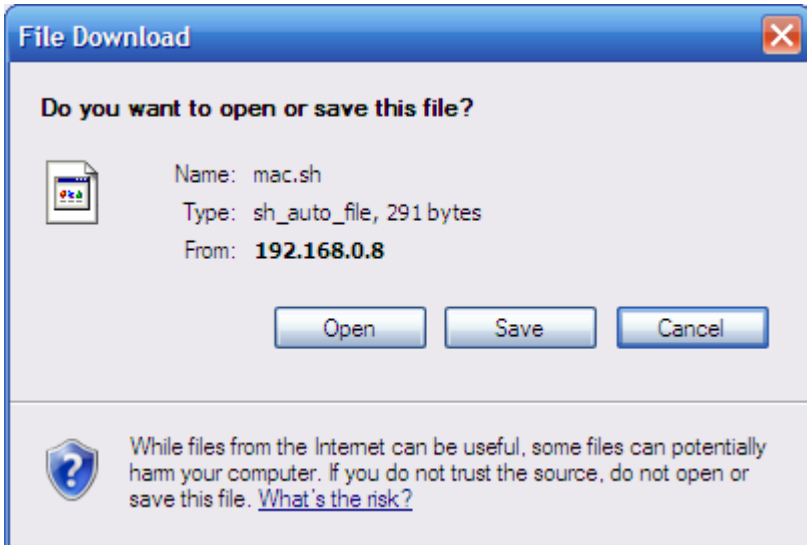
There are three steps to protect your content accessed by pre-defined MAC address. The first step is to define MAC address in Ezserver Panel, the second step is to download “mac.sh” from Ezserver Panel and finally copy it into Enigma STB.

- Click MAC Addr. Button to add MAC address in the Accepted List

- Click User Button and select “MAC Address Script” to download “mac.sh”
  - Go to Ezserver Panel to click **User button**
  - Select MAC Address Script



  - Save mac.sh



- **Copy mac.sh into Enigma STB**
  - Copy mac.sh into /usr/script

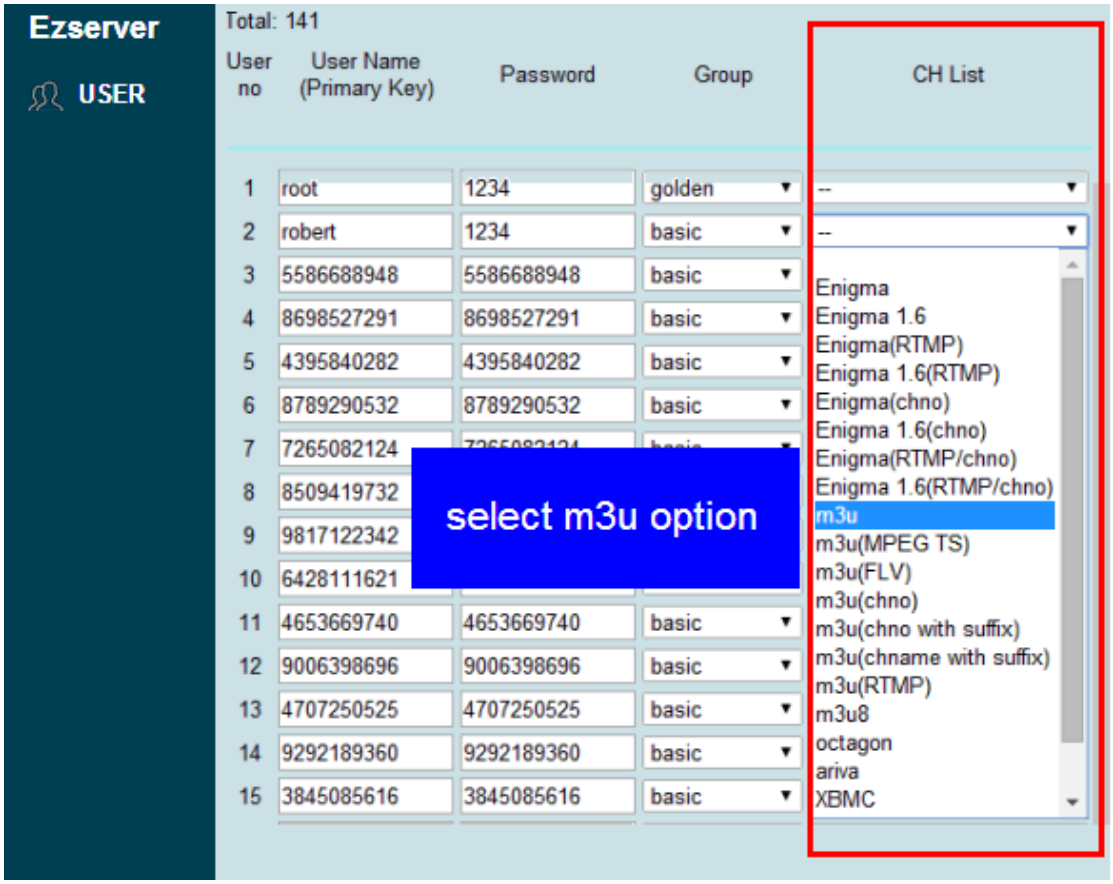
- chmod 777 mac.sh
- Create /usr/bin/enigma2_pre_start.sh and add the below line:

/bin/sh /usr/script/mac.sh > /dev/null 2>&1 &

28. MAG STB

Download m3u channel list from VSPanel and copy it to MAG stb as below:

- Select **m3u** of CH List filed in User panel to download it to your PC.
- Copy the m3u file into a USB and insert it to MAG stb
- Open MAG stb and go to "**Home Media**"
- Select the m3u file in the USB
- Press **F3** to save all links into MAG stb
- Go to **IPTV channels** to play all links

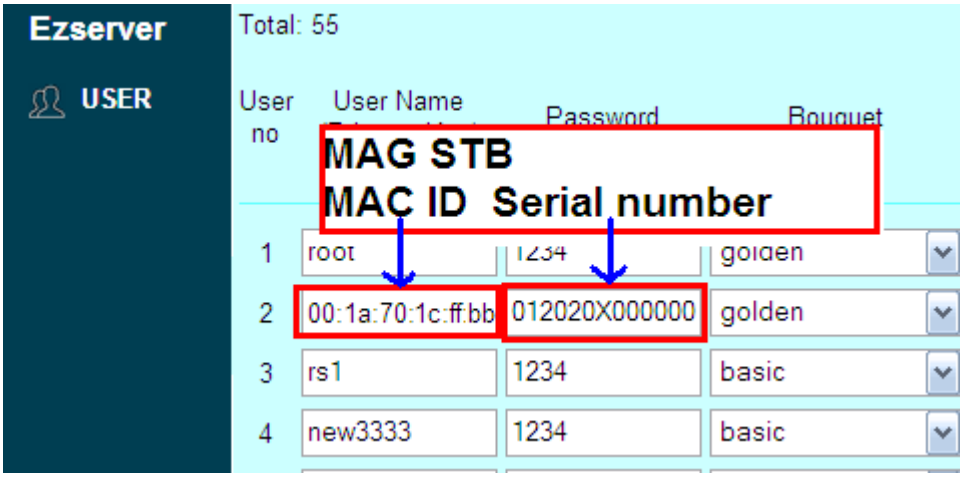


29. Ezserver and Stalker integration

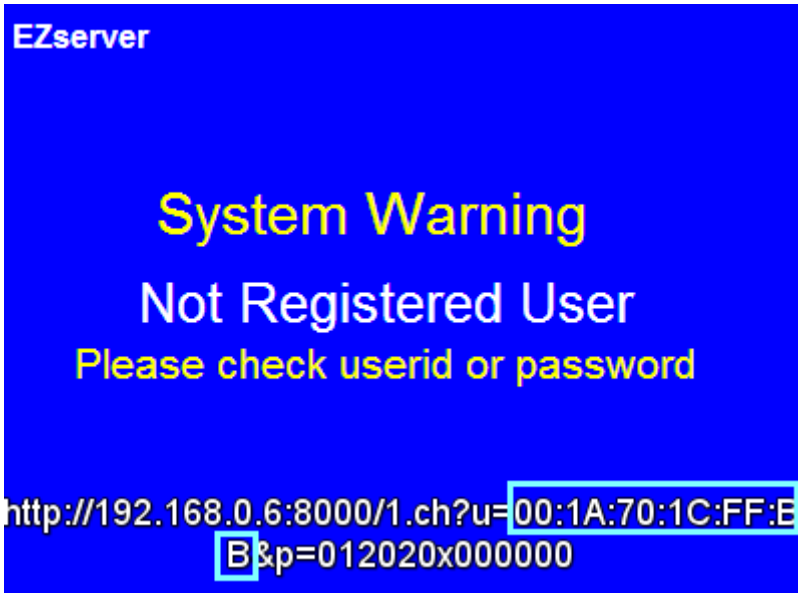
There are two ways to integrate MAG STB with Ezserver, they are to use Stalker with origianl MAG UI

You need to add a user with password in Ezserver Panel first:

- Add a user by MAC Address and Serila Number in Ezserver User Panel. **Take care the case sensitivity of MAC ID from MAG box** with User Name of Ezserver Panel.



- If you see the below screen, it means the Username of Ezserver Panel and MAC ID from Mag box are not same for the case sensitivity.



Ex. The MAC ID of MAG stb is **00:1A:70:1C:FF:BB**, the **username** is defined by **00:1a:70:1c:ff:bb**, so change **username** to **00:1A:70:1C:FF:BB.**

A. Source URL without protection

- Create a user in EZserer Panel (ex. username: test, passwrod: 1234)
- Login stalker portal

- Click "**Sections**: **IPTV channels**"
- add ezserver links as below into **IPTV Channels**
  - http://ezserver_ip:port/ChannelName?u=username:p=password
  - ex. http://192.168.0.8:8000/TV1?u=test:p=1234

B. Source URL with protection

- Login stalker portal
- Click "**Sections**: **IPTV channels**"
- add ezserver links as below into **IPTV Channels**
  - http://ezserver_ip:port/ChannelName
  - ex. http://192.168.0.8:8000/TV1
  - Do not need to add username and password in the link, just add Channel Name.
- add the extra code in stalker_portal-x.x.x/c/player.js
  - **stalker newest version**
    - line 2525: this.play_now(cmd);
    - Add **cmd += '?u='+stb. profile .mac+':p='+stb.serial_number;** before line 2525
  - Ex :

Line 2525: **cmd += '?u='+stb.profile.mac+':p='+stb.serial_number;**

Line 2526: this.play_now(cmd);

  - **stalker newest version with MPEG TS output**
    - line 2525: this.play_now(cmd);
    - Add **cmd += '?u='+stb. profile .mac+':p='+stb.serial_number+':muxer=ts';** before line 2525
  - Ex :

Line 2525: **cmd += '?u='+stb.profile.mac+':p='+stb.serial_number+':muxer=ts';**

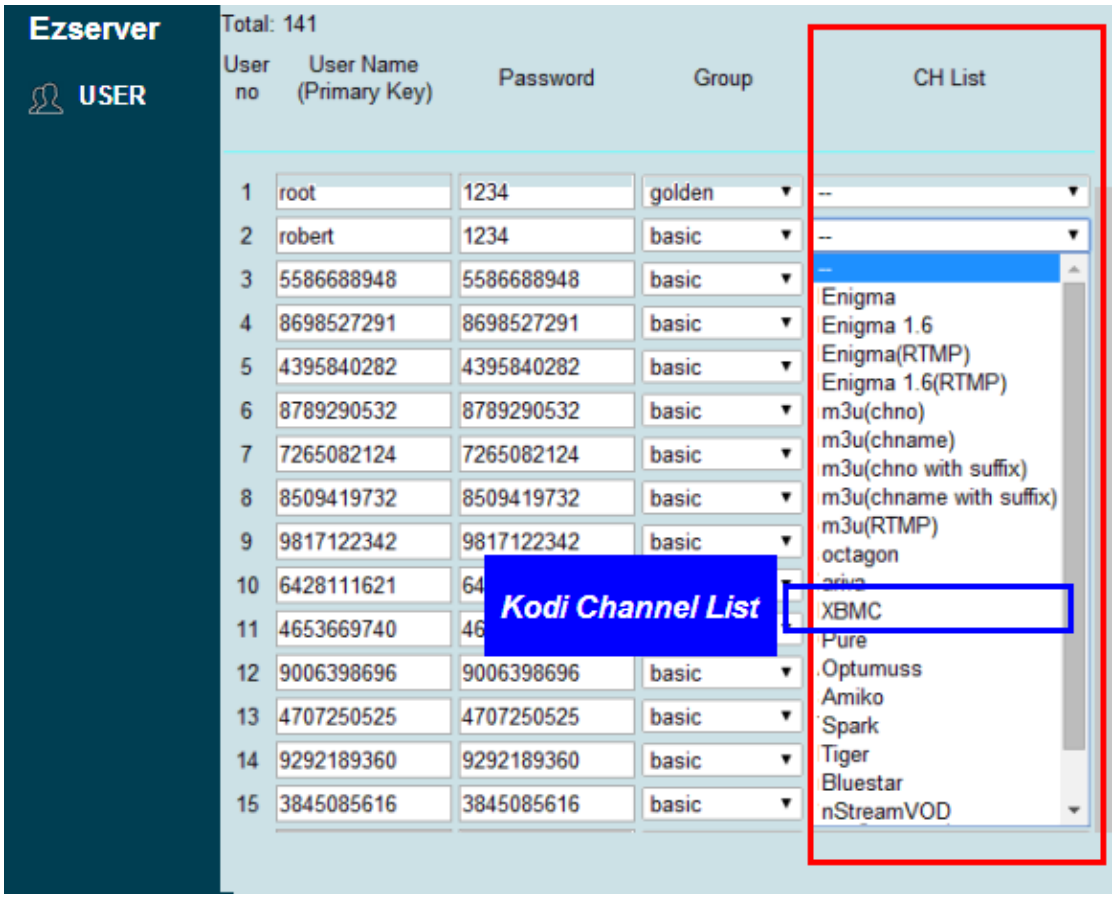
Line 2526: this.play_now(cmd);

- **stalker V4 version**
  - line 2435 : this.create_link('remote_pvr', cmd, 0);
  - Add **cmd.cmd += '?u='+stb.mac+':p='+stb.serial_number;** before line 2435
- Ex :
  - Line 2435: **cmd.cmd += '?u='+stb.mac+':p='+stb.serial_number;**
  - Line 2436: this.create_link('remote_pvr', cmd, 0);
- **stalker V5 version**
  - line 2438: this.play_now(cmd);
  - Add **cmd += '?u='+stb.mac+':p='+stb.serial_number;** before line 2438
- Ex :
  - Line 2438: **cmd += '?u='+stb.mac+':p='+stb.serial_number;**
  - Line 2439: this.play_now(cmd);

30. Kodi

Download Kodi channel list by each user.

- Select XBMC of CH List filed in User panel to download it to your PC.

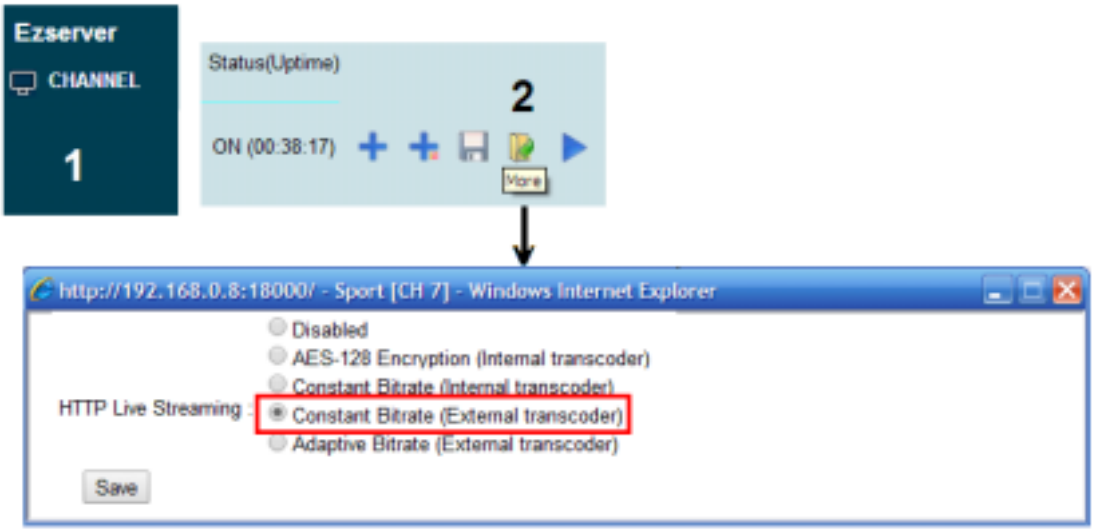


- save it to C:\Desktop\xxxx\Document\ezserver_ch_list(root).strm and share the folder for SMB.
- For PC
  - Open Koid to Videos >> Files >> Add video source >> Browser >>C, then press OK.
- For Mobile
  - Open Koid to Videos >> Files >> Add video source >> Browser >> Windows Network (SMB)
  - You can see your PC with shared folder xxxx, then press OK.
  - Click ezserver_ch_list(root).strm to play all channels.

31. Channel with Logo Watermark

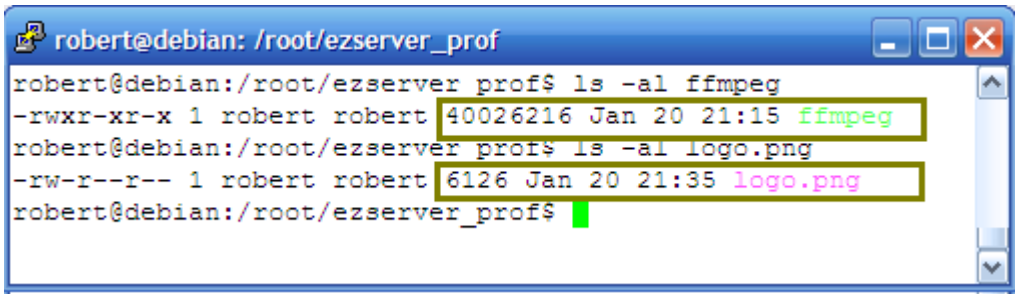
This function is to add a logo watermark on live channel. Administrator follows up the below steps to enable the live channel record:

- 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'**

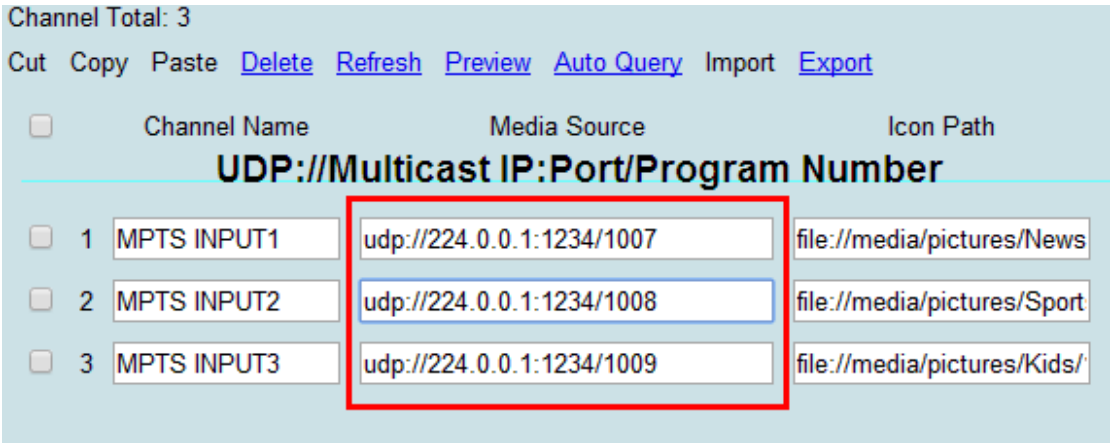
- Upload **ffmpeg** and **logo.png** into ezserver_prof or ezserver_standard folder.



- 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

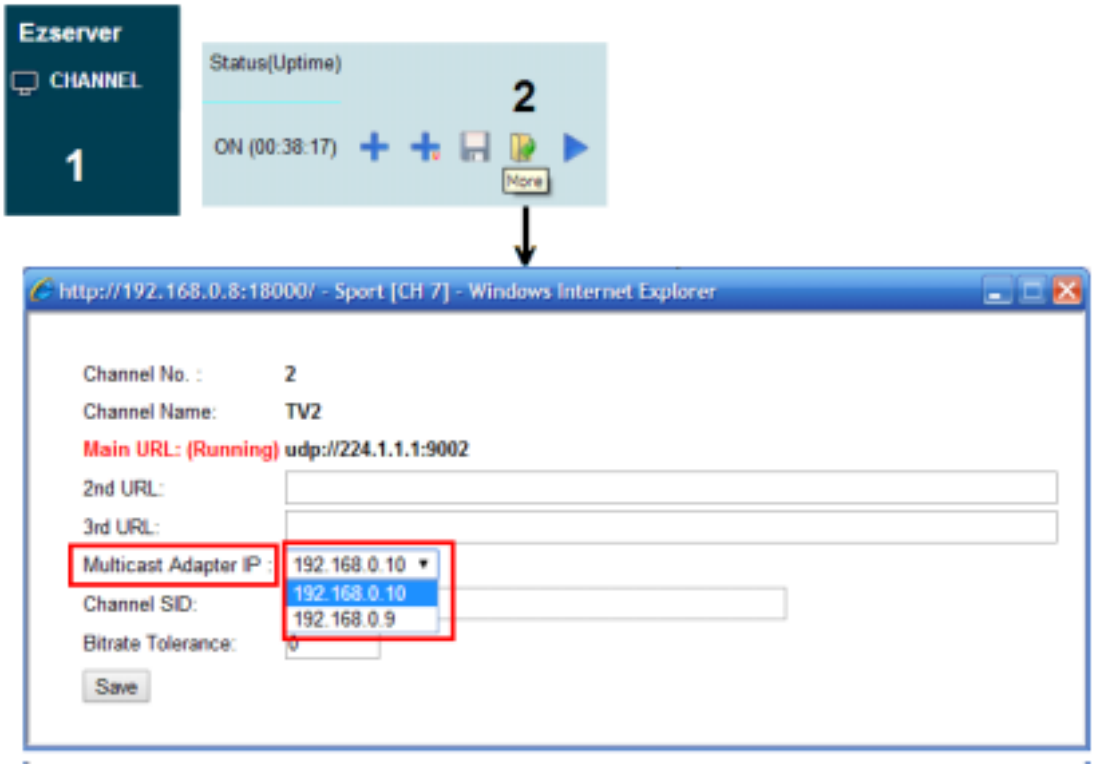
32. MPTS Input / SPTS output

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:

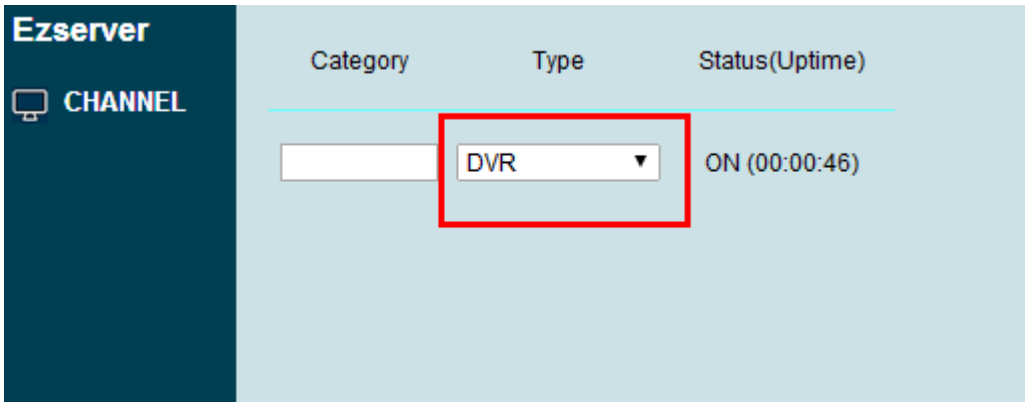


2. select one IP for multicast stream in the same LAN.

33. DVR Time Shift with timestamp option in URL

This function is to play DVR channel by **timestamp** option. Administrator need to follow up the below steps :

- Set Channel Type to **DVR**.



- Set **DVR Duration**

A player can use timestamp option to do **backword** and **forward** function in channel URL as below:

- 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.

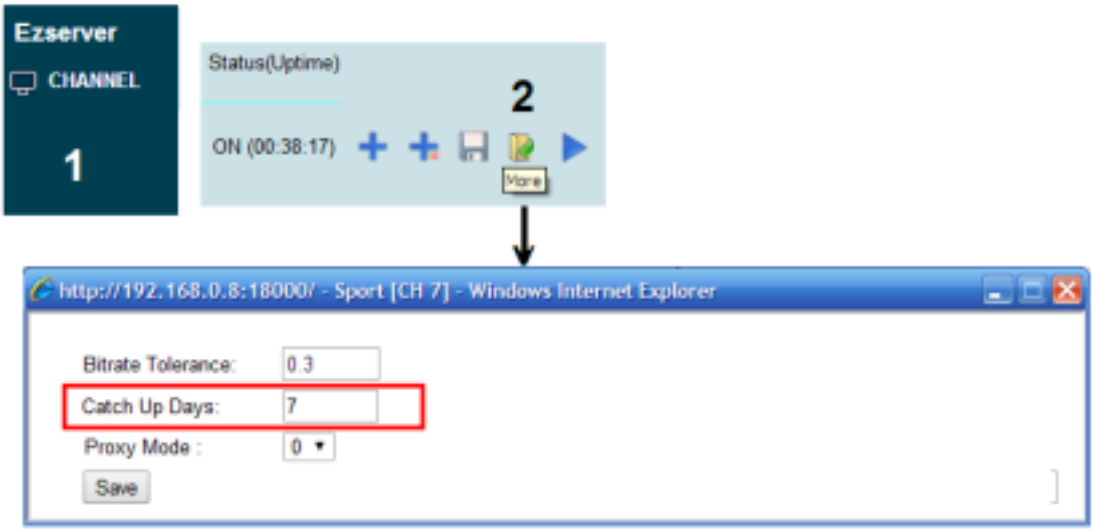
A player can use .m3u8 URL without timestamp option for live **(back to now)** as below:

- URL Syntax: http://serverip:port/xxx?u=xxx:p=xxx:
  - **http://192.168.0.6:8000/ch1.m3u8?u=test:p=1234**

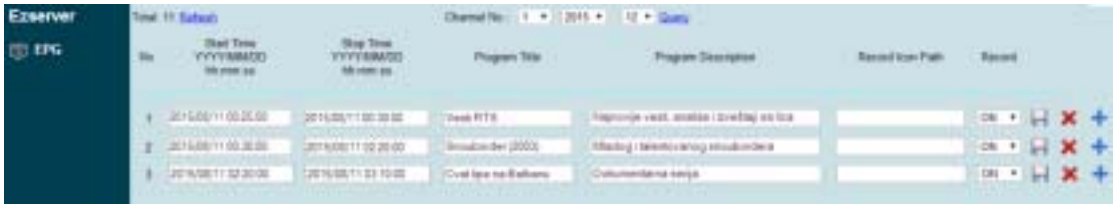
34. EPG Time Shift with utc option in URL

This function is to play recorded video by EPG Epoch Timestamp. Administrator need to follow up the below steps :

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



- Use EpochConverter (http://www.epochconverter.com) to create Epoch Timestamp from Human date(YYYY/MM/DD mm:ss).
- Click EPG button to check if Human date is in EPG List



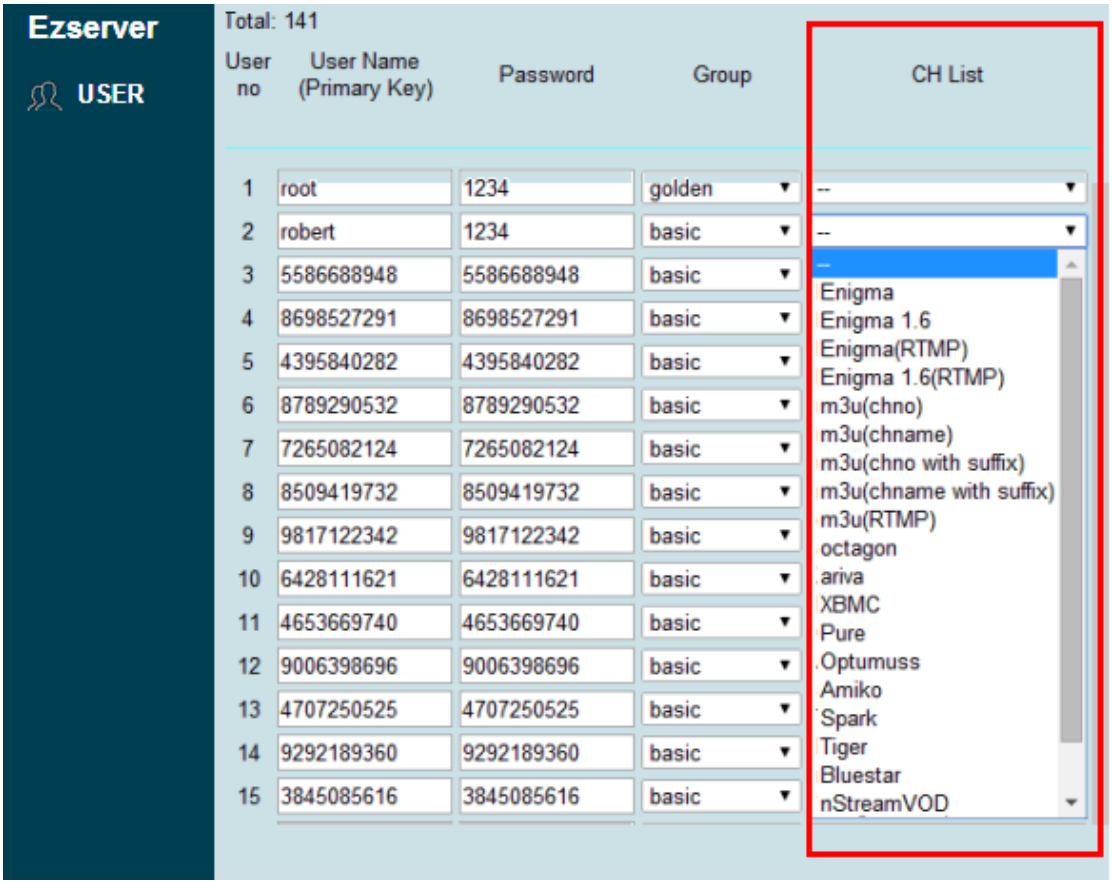
- Click Movie button to check if the program is in Movie List.

- 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

35. 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..



36. Subtitle for Movie

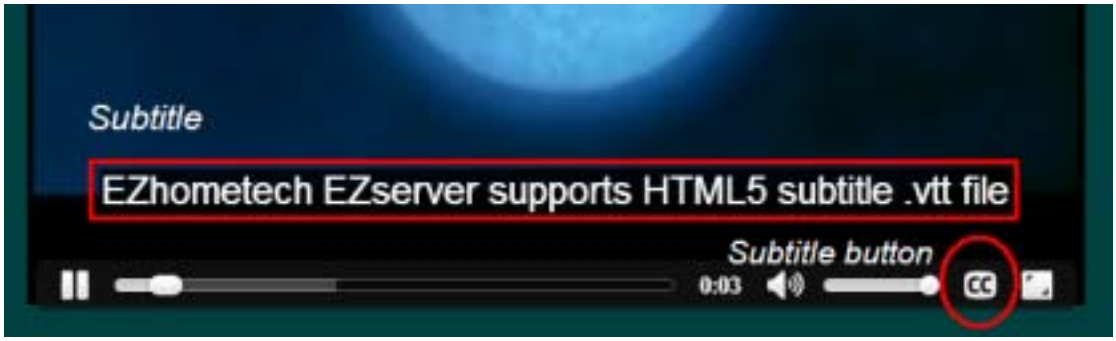
Ezserver supports HTML5 video tag for subtitle WebVTT. It suppors mp4 file with subtitle. A movie needs a mp4 file and vtt file with the same filename in the same folder.

Ex.

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



37. Migration to Ezserver

Migrating your panel or server to Ezserver is to copy channel input links and user profiles of your panel or server to Ezserver database. The channel input links are in a m3u file and user profiles is in a txt file.

Migration Steps for Linux:

ezserver_prof# **./migration.sh**

Migration channel filename (.m3u)? **ch.m3u**

Migration user filename (.txt)? **user.txt**

Migration to Ezserver Finished...

Ex1:

ezserver_prof# **./migration.sh**

Migration channel filename (.m3u)? **ch.m3u**

Media Name=RTMP1

Media Source= rtmp://192.168.0.10/test/tv1

Media Name=RTMP2

Media Source= rtmp://192.168.0.10/test/tv2

Media Name=HLS1

Media Source= http:/192.168.0.10/test/tv2.m3u8

Total [3] M3U URL is converted to channel_definition.xml

Migration user filename (.txt)? **user.txt**

User Name=test1, Password=12341

Date=1/1/2029

User Name=test2, Password=12342

User Name=test3, Password=12343

Day=60

User Name=test4, Password=12344

Date=2/1/2029

User Name=test5, Password=12345

Day=90

Total [5] Users is converted to user_profile.xml

Migration to Ezserver Finished...

Ezhometech

www.ezhometech.com

Migration Input file format

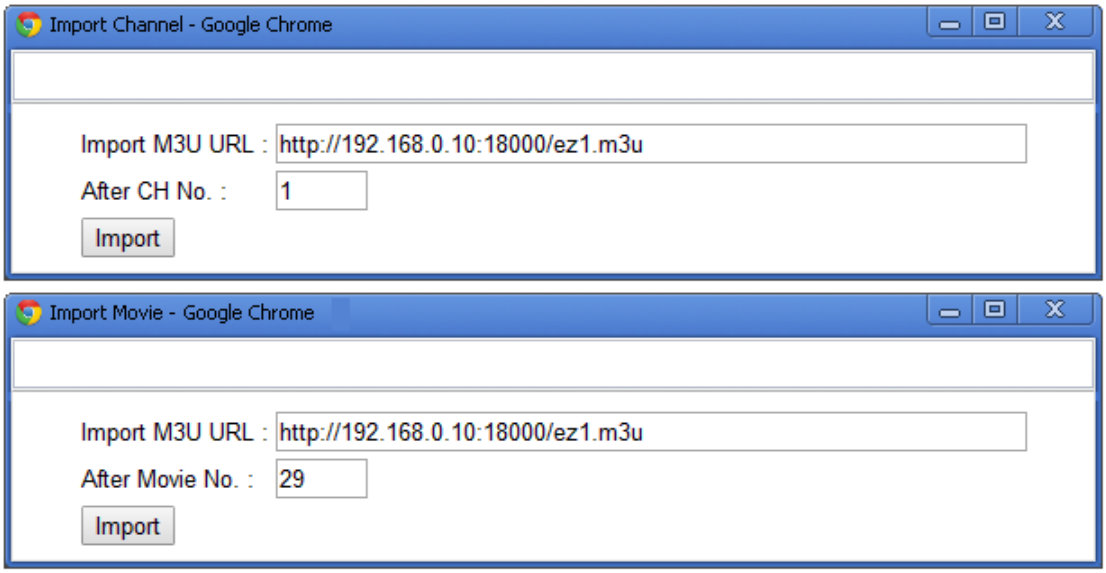
Channel m3u
Ex1: #EXTM3U #EXTINF:-1,RTMP1 rtmp://192.168.0.10/test/tv1 #EXTINF:-1,HLS1 http:/192.168.0.10/test/tv2.m3u8 #EXT-X-ENDLIST

User profile text
Syntax1: http://URL/get.php?username=NAME&password=PASSWORD&type=m3u&output=mpegts http://URL/get.php?username=NAME&password=PASSWORD&type=m3u&output=mpegts&date=MM/DD/YYYY http://URL/get.php?username=NAME&password=PASSWORD&type=m3u&output=mpegts&&day=NUMBER
Syntax2: username=NAME&password=PASSWORD username=NAME&password=PASSWORD&date=MM/DD/YYYY username=NAME&password=PASSWORD&&day=NUMBER
Ex1: http://192.168.0.10:8000/get.php?username=test1&password=1234&type=m3u&output=mpegts&date=1/1/2029 http://192.168.0.10:8000/get.php?username=test2&password=1234&type=m3u&output=mpegts http://192.168.0.10:8000/get.php?username=test3&password=1234&type=m3u&output=mpegts&day=60
Ex2: username=test1&password=1234&date=1/1/2029 username=test2&password=1234 username=test3&password=1234&day=60
Note: o **Date** option is for user expired date. o **Day** option is available days. Once the user plays channel, **Day** option becomes **Date** option.

38. Import M3U File into Ezserver Panel

There are 2 ways to import m3u list into Ezserver Panel. One is to use import button of Ezsever panel, the other is to use a tool to do it.

1. by panel:



2. Convert m3u8 file into Ezserver channel or movie list : channel_definition.xml / movie_definition.xml

Command Options:

Function:

Convert m3u file into Ezserver Channel or Movie database

Usage:

ezchconverter [-c | -m] filename(m3u)

Options:

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

-m Convert m3u file to movie_definition.xml

Examples:

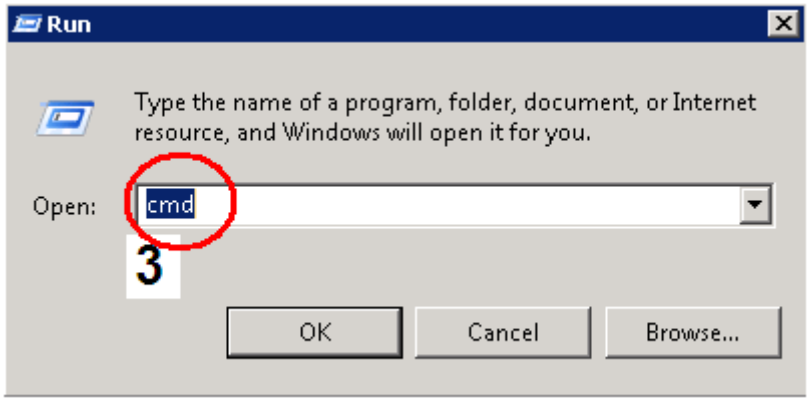
>ezchconverter 1.m3u ... Convert 1.m3u to channel_definition.xml

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

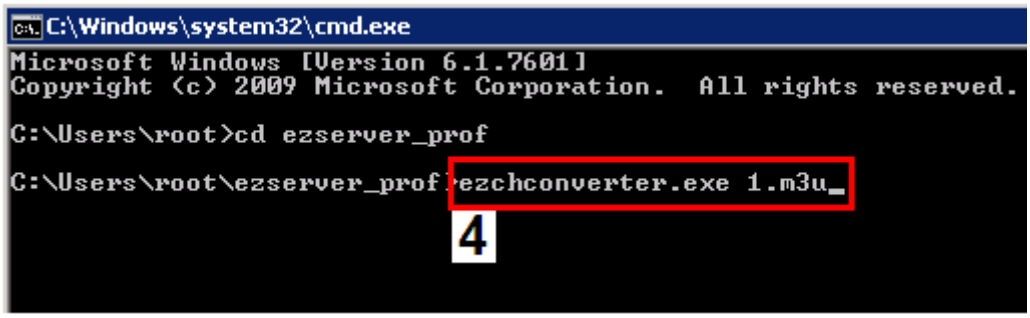
>ezchconverter -m 1.m3u ... Convert 1.m3u to movie_definition.xml

- **Windows Version:**
  - Click Start: Run

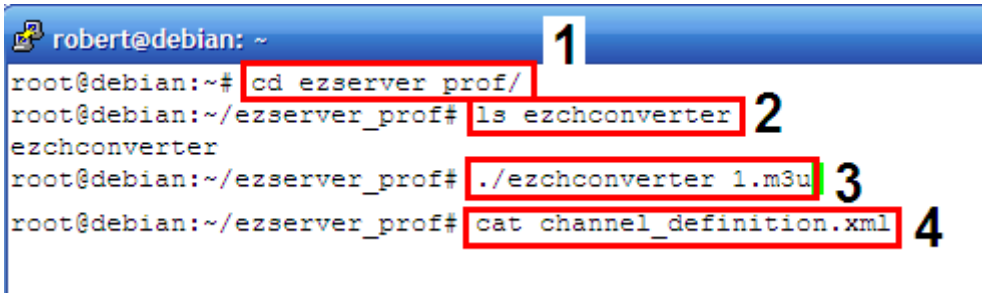
- Tyep "**cmd**"



- Run "**ezchconverter.exe 1.m3u**"



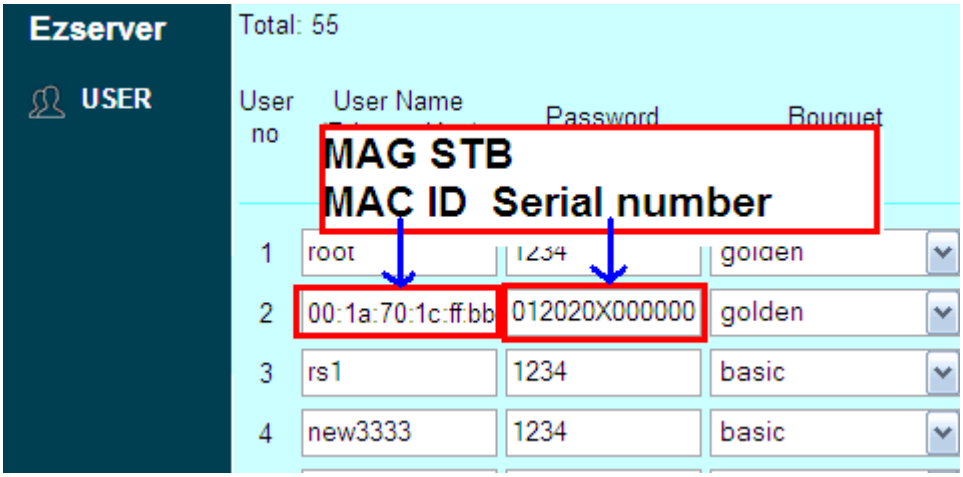
- **Linux Version:**
  - cd ezserver_prof/
  - ls ezchconverter
  - ./ezchconverter 1.m3u
  - cat channel_definition.xml



39. Stalker with Protection Links from Ezserver

Stalker IPTV channel management provides channel input URLs to MAG player. This way is possible to let users know source FULL URL. Ezserver provides the below way to let stalker with protection URLs:

- Add a user by MAC Address and Serila Number in Ezserver User Panel. **Take care the case sensitivity of MAC ID from MAG box** with User Name of Ezserver Panel.



- Login stalker portal
- Click "**IPTV channels**"
- add ezserver links as below into **IPTV Channels**
  - http://ezserver_ip:port/ChannelName
  - ex. http://192.168.0.8:8000/TV1
- add the extra code in stalker_portal-x.x.x/c/player.js
  - Find line 2435 or 2438:
    - line 2435 : this.create_link('remote_pvr', cmd, 0);
    - Add **cmd.cmd += '?u='+stb.mac+':p='+stb.serial_number;** before line 2435

  or (stalker V5 version)
    - line 2438: this.play_now(cmd);
    - Add **cmd += '?u='+stb.mac+':p='+stb.serial_number;** before line 2438
  - Ex 1:
    - Line 2435: **cmd.cmd += '?u='+stb.mac+':p='+stb.serial_number;**
    - Line 2436: this.create_link('remote_pvr', cmd, 0);
  - Ex 2: (stalker V5 version)
    - Line 2438: **cmd += '?u='+stb.mac+':p='+stb.serial_number;**
    - Line 2439: this.play_now(cmd);

40. Automatic EPG 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.

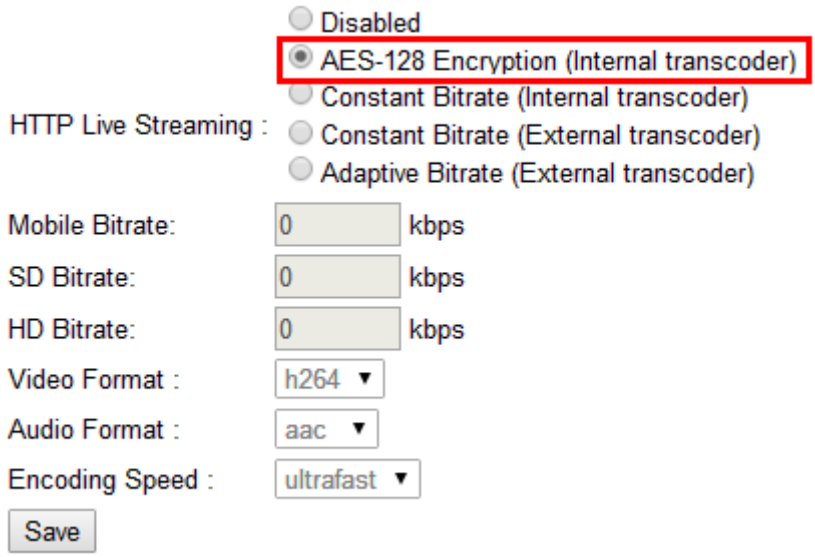
B. From XMLTV URL

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

41. Encrypted Streaming with AES-128

Step1:

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



Step2:

- Input URL into with VLC
  - Syntax: http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx
  - Syntax: http://ip_address:port/x.ch?u=xxxx:p=xxxx
  - Syntax: http://ip_address:port/channe_name?u=xxxx:p=xxxx

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

  Ex.2: **http://192.168.0.10:8000/1.ch1?u=test:p=1234**

  Ex.3: **http://192.168.0.10:8000/TV1?u=test:p=1234**

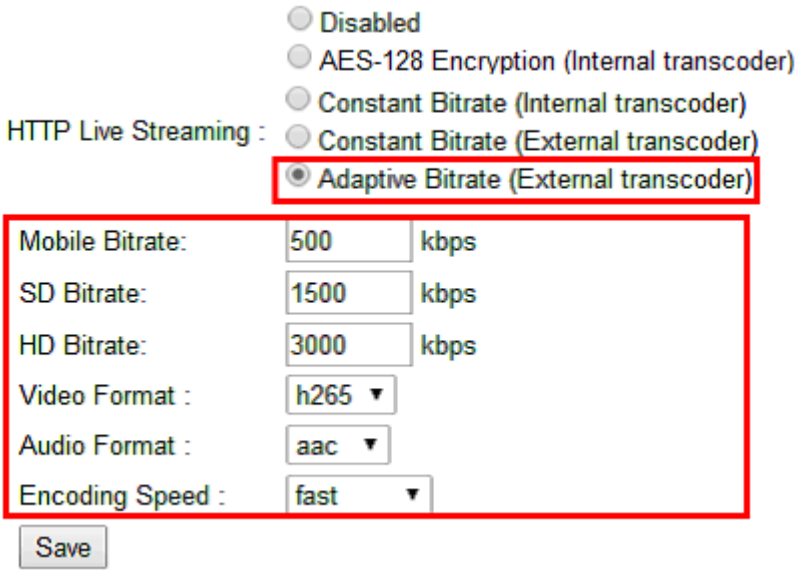
42. DASH Setting for Adaptive Bitrate Streaming

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

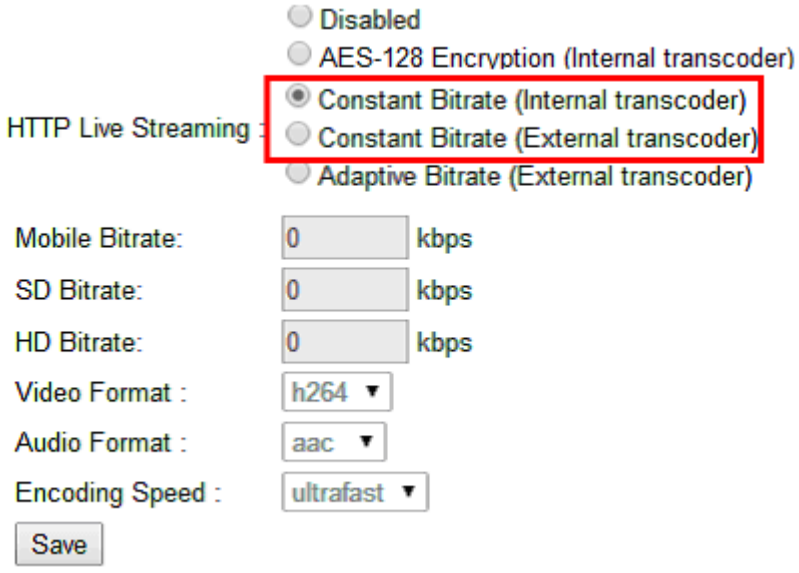
- **Set DASH Transcoder Path**

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

- **Option 1: Adaptive Bitrate Streaming**



- **Option2: Constant Bitrate Streaming:**



- **Player URL Syntax4**:

http://ip_address:port/ChannelName?u=xxxx:p=xxxx

http://ip_address:port/chx.m3u8?u=xxxx:p=xxxx

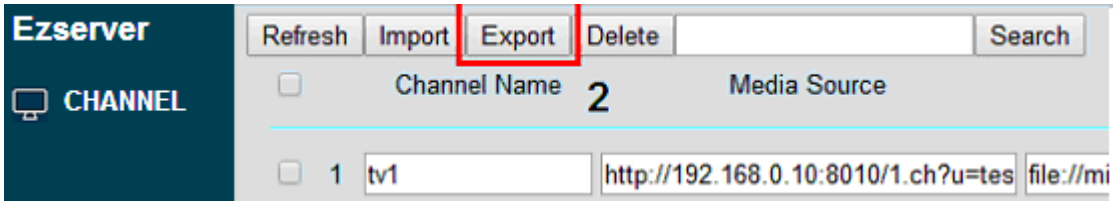
Ex. 1: http://test:1234@172.16.10.50:8000/TV1

Ex. 2: http://test:1234@172.16.10.50:8000/ch4.m3u8

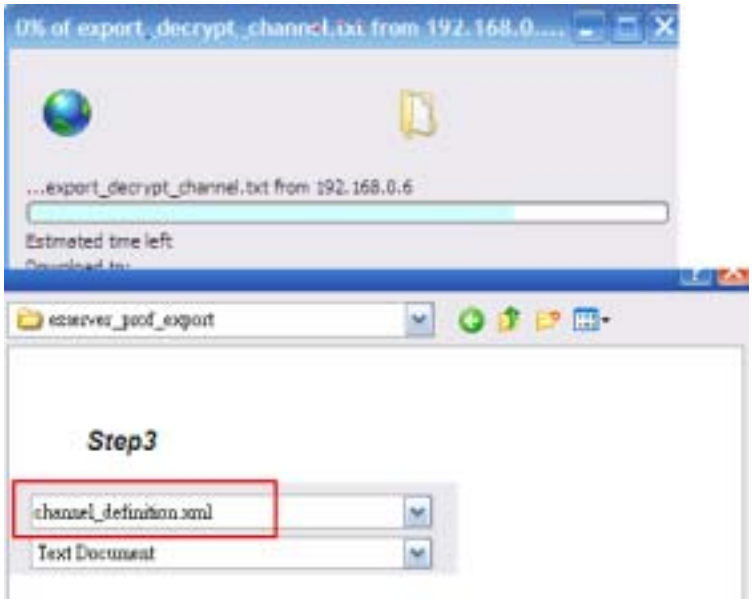
43. Backup Channel URLs

Follow the below steps to export current channel defintion to other ezservers:

Step1: Click “Channel”, then click Export button



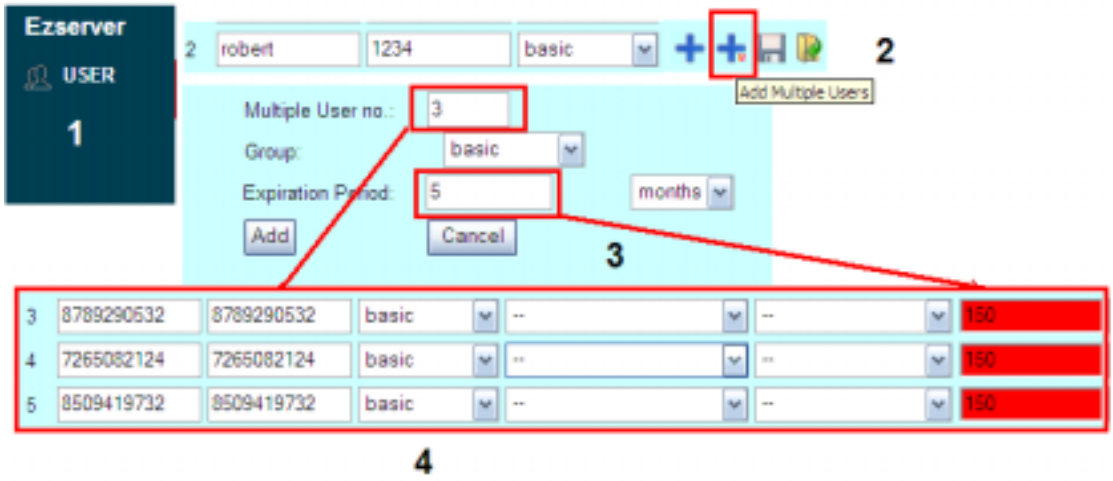
Step2: Save it by channel_definition.xml



Step4: copy channel_definition.xml to other ezserver folders

44. Active Code Mode Setting

- 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.

45. Reseller 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).

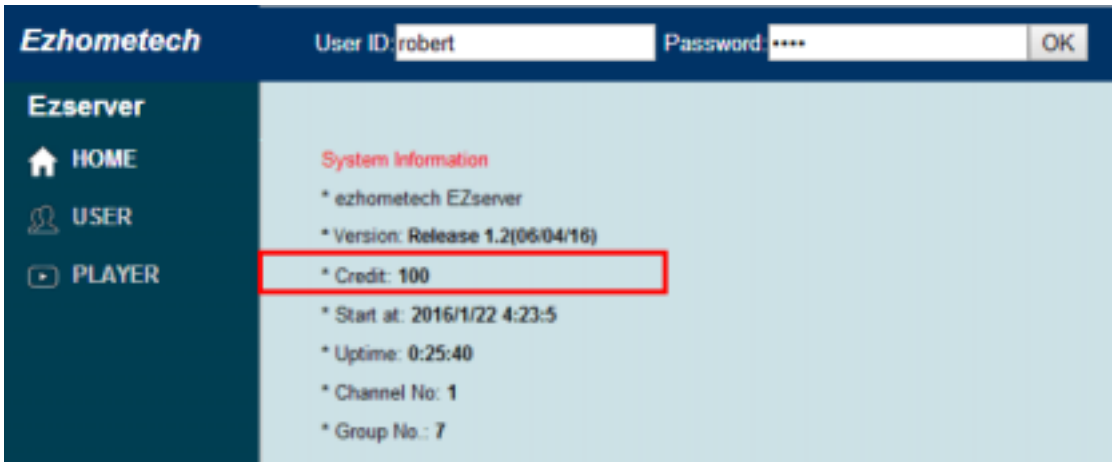
EX. http://192.168.0.6:18000/reseller/index.htm

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.



46. Notice Video Setting

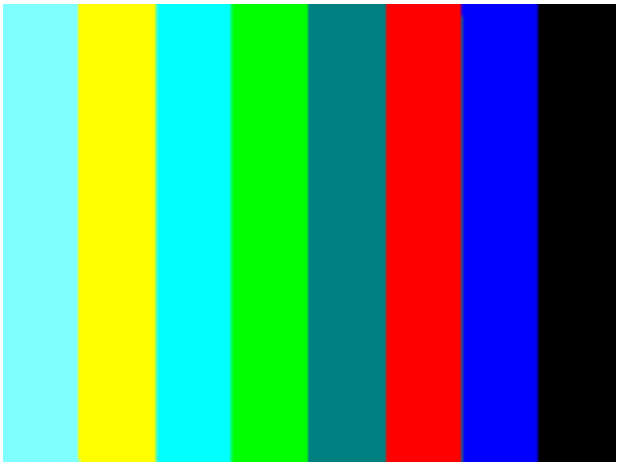
Offline Channel Setting

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



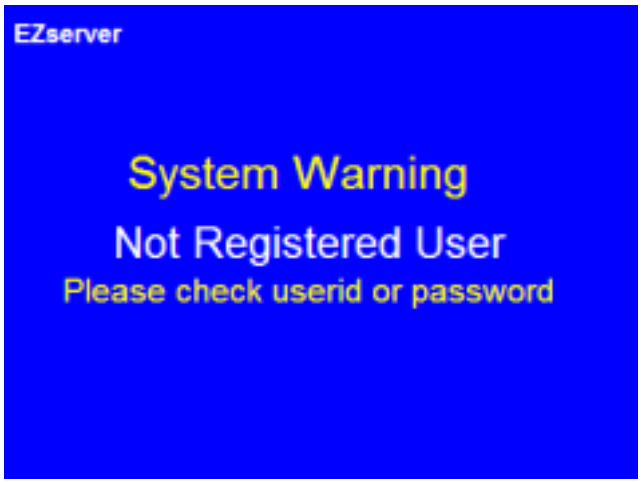
Not Registered User Setting

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

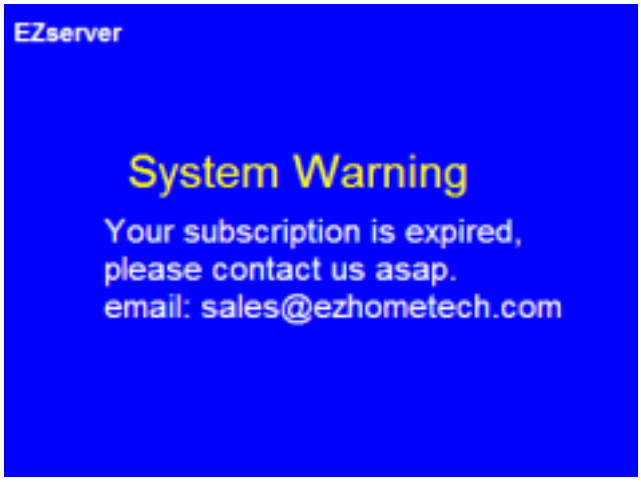
Time-Expired Setting

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



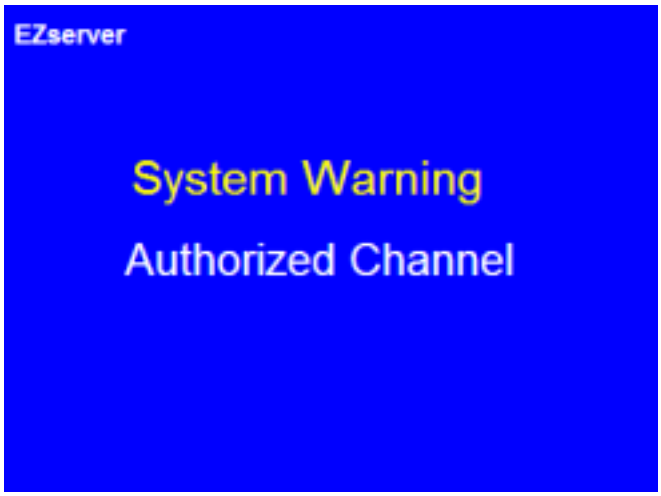
Unauthorized Channel Setting

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



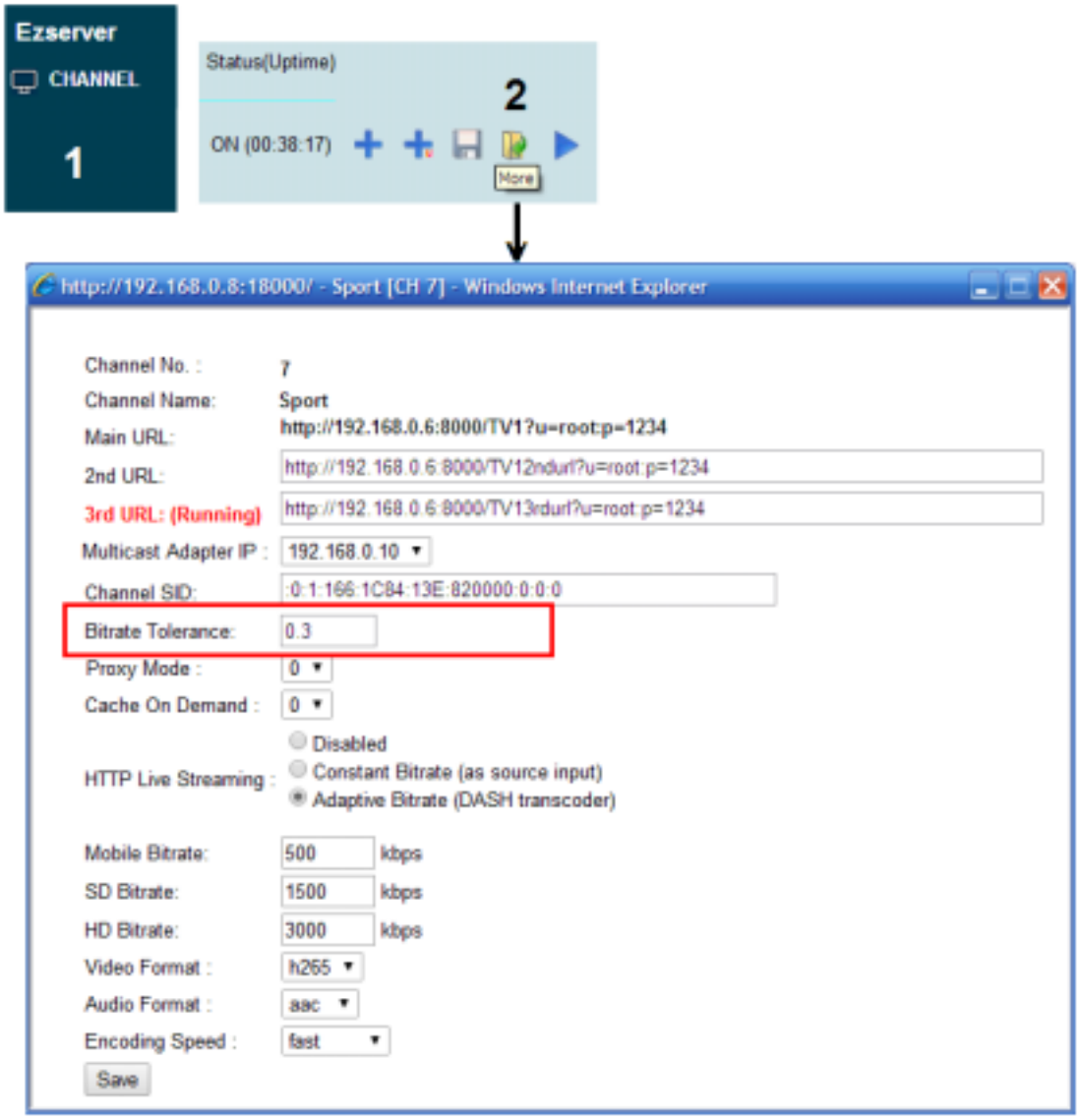
47. Administrator password change

Use Internet browser such as *Internet Explore*, *Chrome*, *Firefox* or *Safari* to enter System Management by the URL path : **http://Server_IP:18000/admin/index.htm**

Login Panel by user id "**root**" and password, then click **User Button** to change root password.

48. Video 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)

49. Ezserver 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_prof 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_prof folder.
  - create **ezserver_backup_setting.tar**
- **restore_setting.sh**
  - This script is to restore the current setting into the new ezserver_prof folder.
  - restore setting from **ezserver_backup_setting.tar**

50. Linux Network Performance Increasing

You can use the below Linux commands to adjust Linux system and tcp buffer size to get the better network performance. This setting is also added by setup.sh

Ex 1. Set Linux System and TCP max buffer size to 12Mbytes (12582912)

```
# echo 'net.core.wmem_max=12582912' >> /etc/sysctl.conf
# echo 'net.core.rmem_max=12582912' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_rmem= 10240 87380 12582912' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_wmem= 10240 87380 12582912' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_window_scaling = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_timestamps = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_sack = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_no_metrics_save = 1' >> /etc/sysctl.conf
# echo 'net.core.netdev_max_backlog = 5000' >> /etc/sysctl.conf
# echo 'net.ipv4.route.flush=1' >> /etc/sysctl.conf
# sysctl -p
```

Ex 2. Set Linux System and TCP max buffer size to 1,677Mbytes (1677721600)

```
# echo 'net.core.wmem_max= 1677721600' >> /etc/sysctl.conf
# echo 'net.core.rmem_max= 1677721600' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_rmem= 1024000 8738000 1677721600' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_wmem= 1024000 8738000 1677721600' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_window_scaling = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_timestamps = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_sack = 1' >> /etc/sysctl.conf
# echo 'net.ipv4.tcp_no_metrics_save = 1' >> /etc/sysctl.conf
# echo 'net.core.netdev_max_backlog = 5000' >> /etc/sysctl.conf
# echo 'net.ipv4.route.flush=1' >> /etc/sysctl.conf
# sysctl -p
```

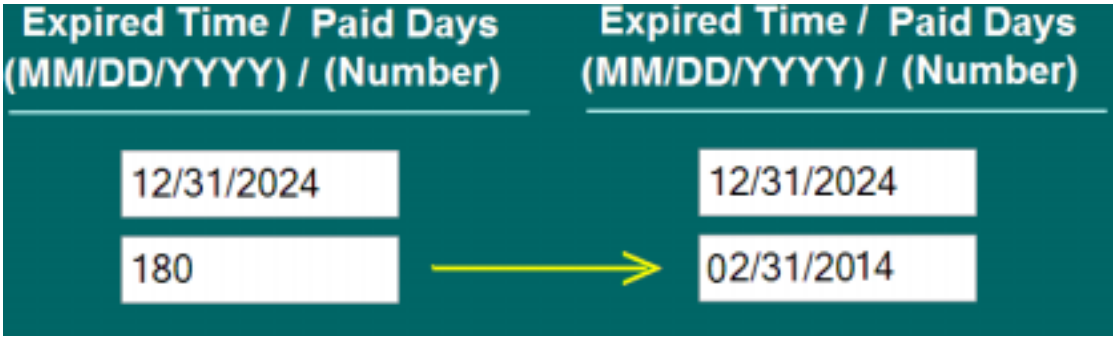
51. Subscribers by User/Password and Top-up Card

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/ezserver_config.txt. For Top-up Card mode, Ezserver administrator needs to set **user_authorization=2**.

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

iptv_time_shift_record_duration=5

tv_on_demand_record_duration=60

bitrate_constant=0

system_log=0

user_authorization=1

ovp_player_register=0

videopath=media/videos

picturepath=media/pictures

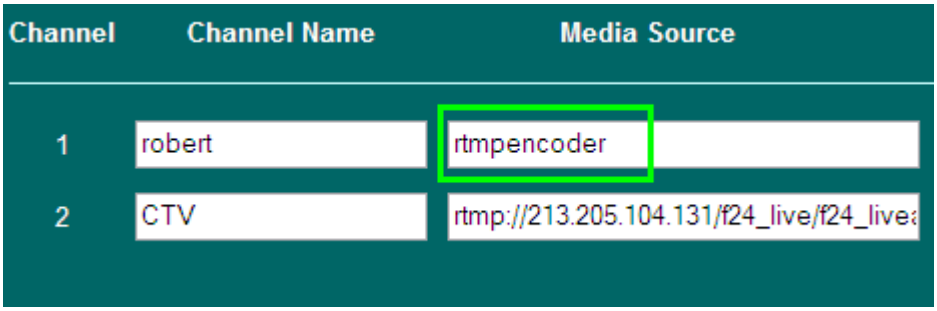
runningtextpath=media/runningtext

52. RTMP Encoder to Ezserver

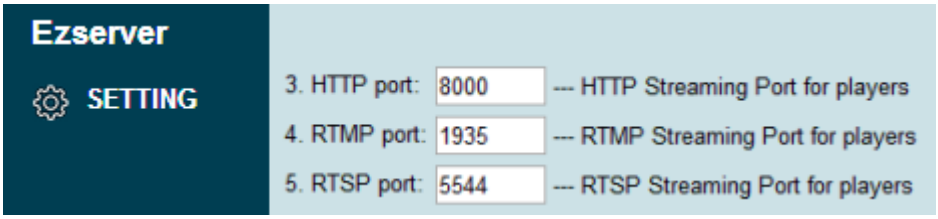
Ezserver supports RTMP Encoder as Adobe FME, XSplit and etc..

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*



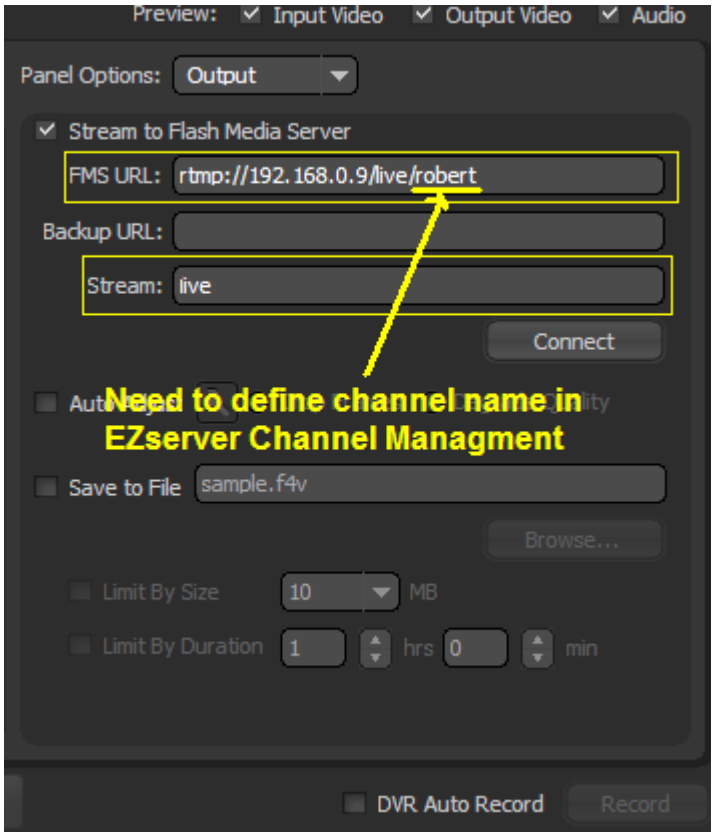
- Set rtmp port to 1935 in Streaming Ports Panel



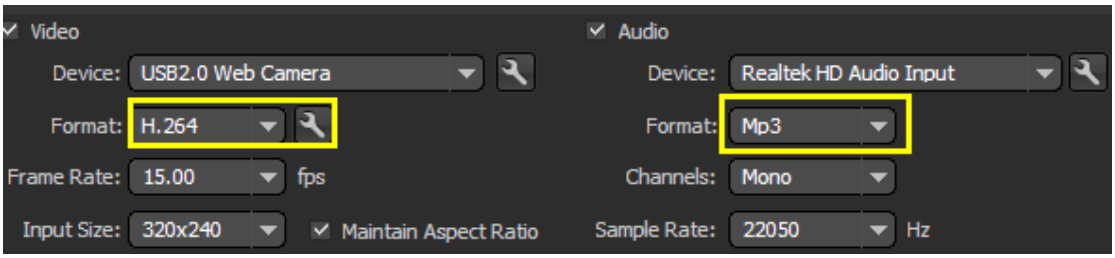
.

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)



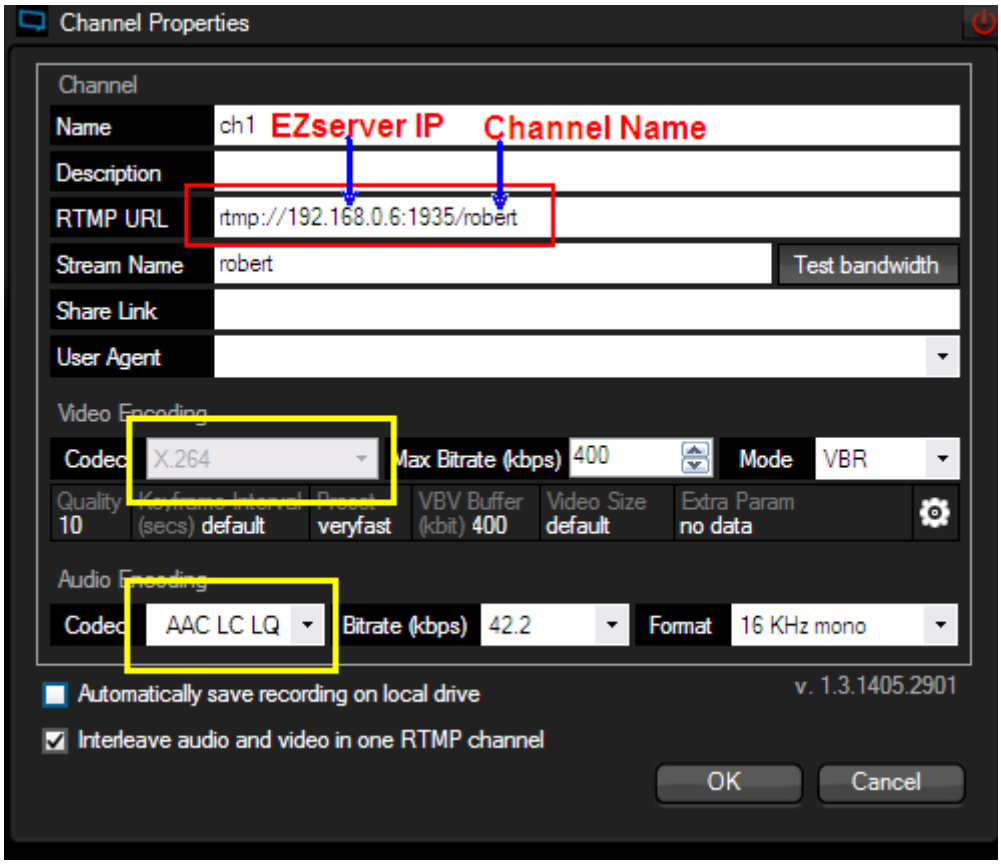
- Select Video Format : H.264 and Audio format : Mp3/AAC, Stereo



- 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

53. FFMPEG Encoder to Ezserver

Install ffmpeg first by ffmepg.sh and use udp.sh to send video into ezserver.

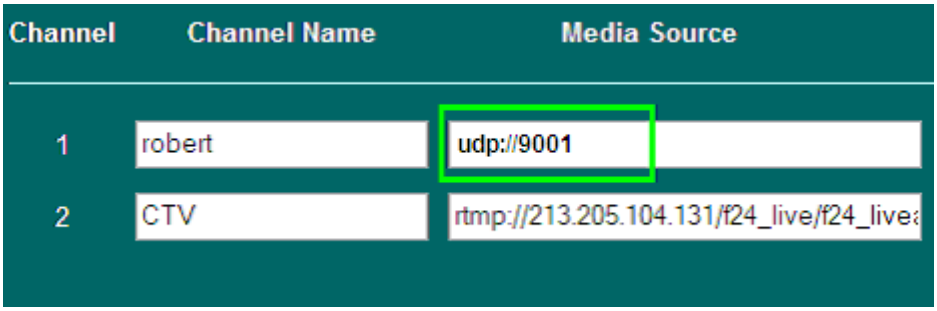
1. Install ffmpeg as below:

- Login your server by putty
- cd /root/ezserver_prof
- chmod 777 ffmpeg.sh
- ./ffmpeg.sh

After above steps, ffmpeg is installed in /ezserver_prof/transcoder 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. Change the below http url to your source url in udp.sh as below:

- 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. Send transcoding stream into Ezserver as below:

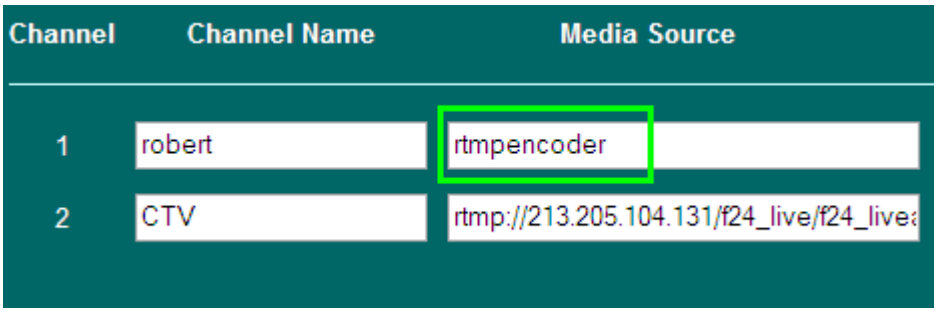
- Login your server by putty
- cd /root/ezserver_prof
- cd transcoder
- chmod 777 udp.sh
- ./udp.sh

5. 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*

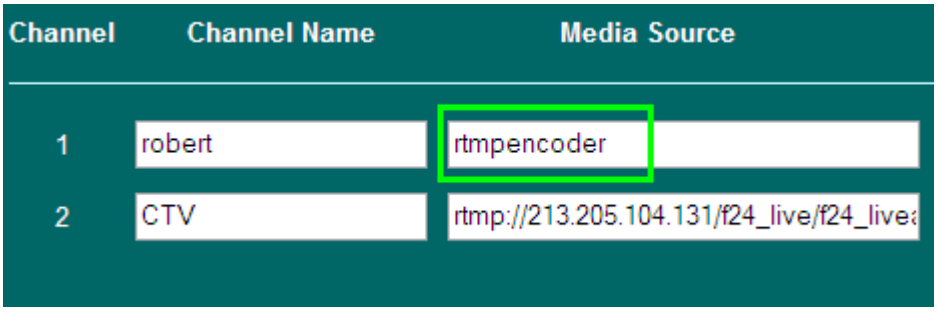


  - Use the below command to get the video/audio capture name from your window pc.
    - ffmpeg -list_devices true -f dshow -i dummy
  - Rtmp command syntax is below:
    - ffmpeg -f dshow -i video="video device name":audio="audio device name" -preset ultrafast -vcodec libx264 -b 300k -bt 300k -s 320x240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

ex.

```
ffmpeg -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*

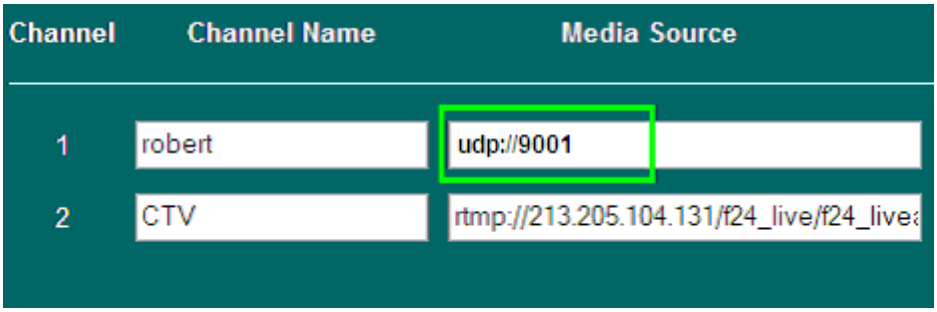


  - Rtmp command syntax is below:
  - ffmpeg -i **rtmp://input_server_ip:port/live/kid** -preset ultrafast -vcodec libx264 -b 300k -bt 500k -s 720x480 -acodec aac -ar 44100 -ab 128k -strict experimental -f flv **rtmp://ezserver_ip/live/robert**

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**

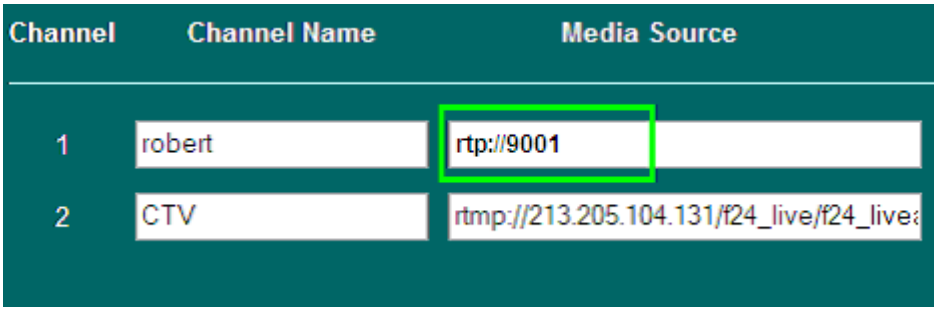
- **RTMP input and UDP transport Stream Output**
  - Define **Channel Name** and udp port in Channel Management.
  - The below example defines **Channel Name** : *robert* and **Medis Source** : udp://9001



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

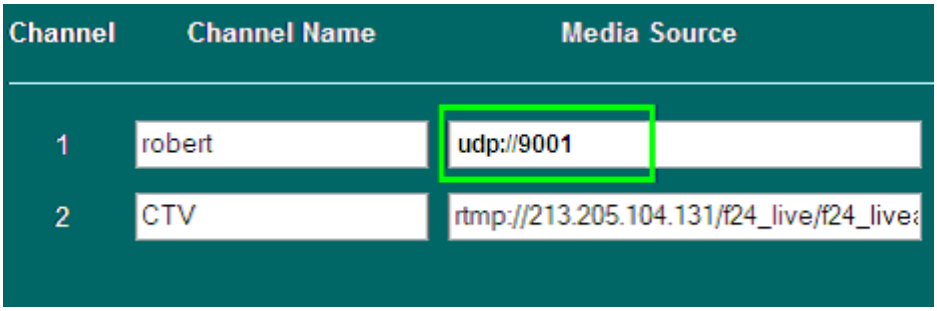


ex.

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**

54. Satellite Device to Ezserver

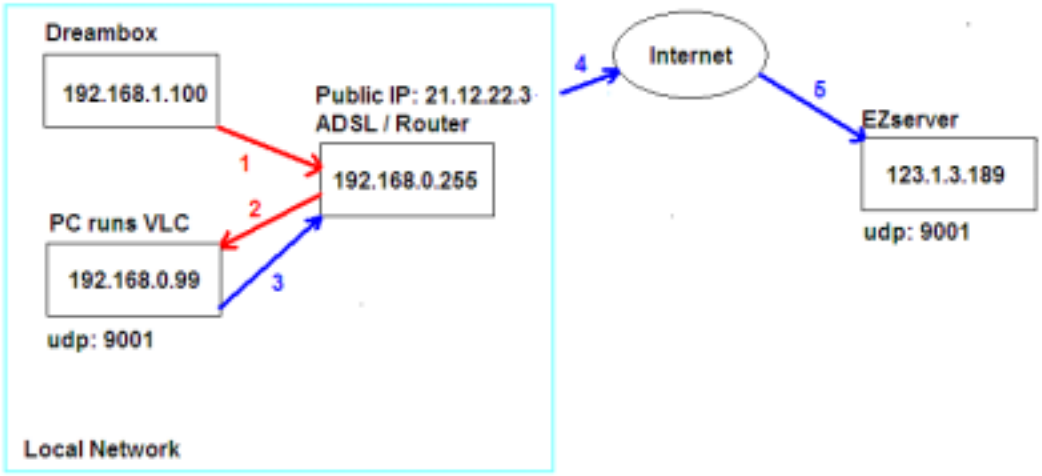
- **Dreambox HTTP input and UDP transport Stream Output**
  - Create a new channel with udp port in Meida Source in Channel Window.
  - The below example defines **Channel Name** : *robert* and **Medis Source** : udp://9001



  - 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.

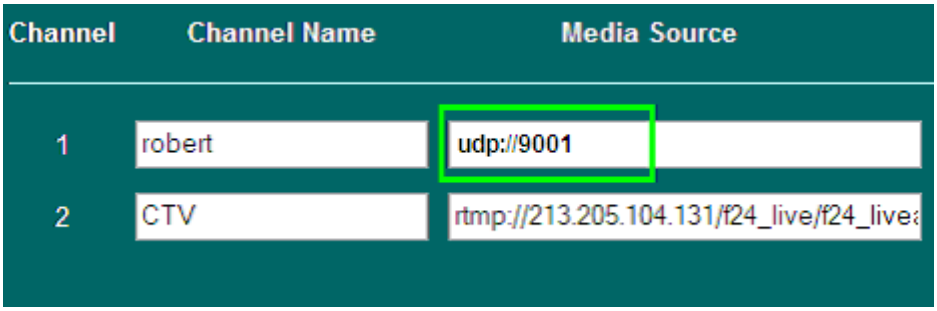


e. The vlc command is as below:

```
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}'
```

55. Multicast Encoder to Ezserver

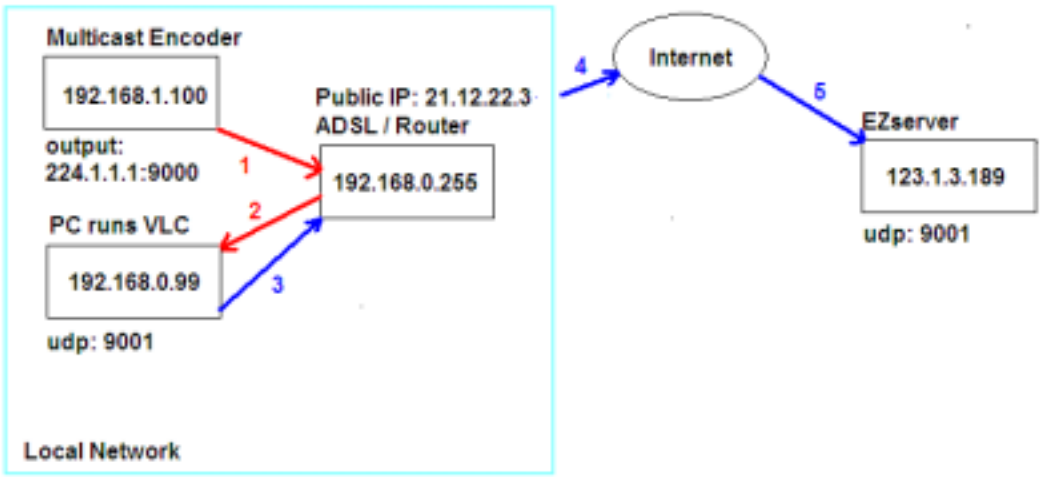
- **Multicast UDP input and UDP transport Stream Output**
  - Create a new channel with udp port in Meida Source in Channel Window.
  - The below example defines **Channel Name** : *robert* and **Medis Source** : udp://9001



  - 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}'
```

56. DNS Server IP Setting

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

- Open **ezt_dns.txt** to change the default DNS IP(168.95.192.1) to the DNS IP of your ISP.

57. System Log / Dump

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**.

58. Auto start Ezserver in Linux

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_prof** folder to select “y” in auto start setting.

Option B: Run **./setup.sh** in **/root/ezserver_prof** 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_prof/checkmo.sh**

Option D: Run **./start.sh** in **/root/ezserver_prof.**

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.

59. External Folder or Storage Server for Movies

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_prof
- 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_prof
- mount -t nfs 192.168.0.8:/root/movie media/videos/
- login panel to set channel type to DVR

60. External Storage Server for DVR channels

For DVR Channels, Administrator can use Linux NFS to store live channel videos into external server.

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/dvr
- add “/root/dvr 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_prof
- mount -t nfs 192.168.0.8:/root/dvr tv_program_archive/
- login panel to set channel type to DVR

61. New installation with original setting

follow the below steps (Example for /root/ezserver prof.)

- rename **ezserver_prof** to **ezserver_prof_old**
- go to **ezserver_prof_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_prof_old/ezserver_backup_setting.tar /root/ezserver_prof/**
- run **./restore_setting.sh** to restore setting from **ezserver_backup_setting.tar**
- run **./start.sh** to start ezserver

62. Backup / Restore Setting and Channel / Movie links

- 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**

63. 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

64. 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_prof/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>
```

65. 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.

66. Multicast Stream to Internet

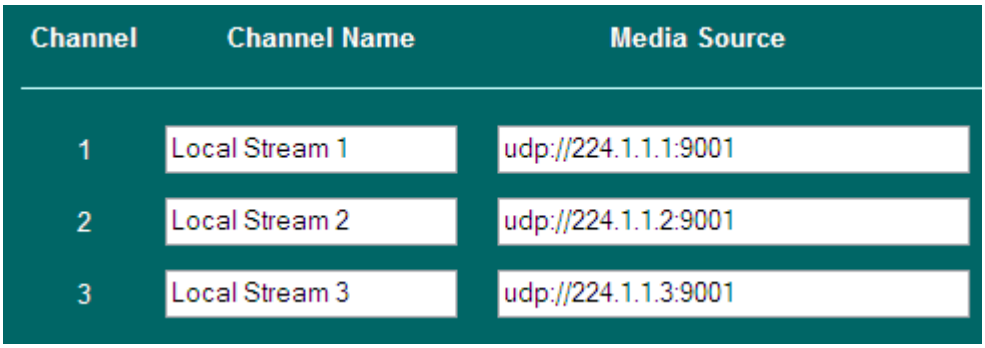
When you have multicast steams from an encoder in Local LAN and you would like to send them to Internet Ezserver in dedicated or VPS server. Please follow the below steps:

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.

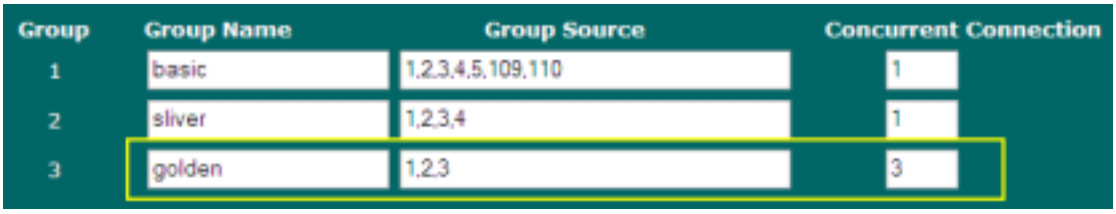
For example:

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

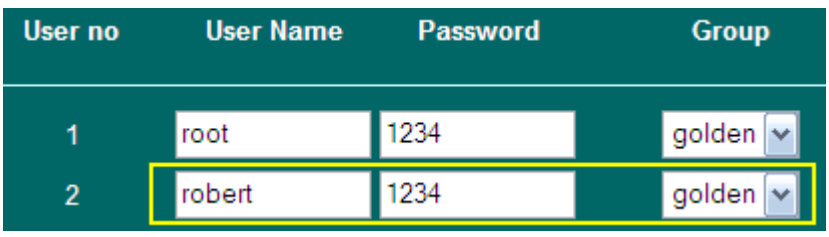
   a. Input the mulicast IP and port into Media Source as below



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.

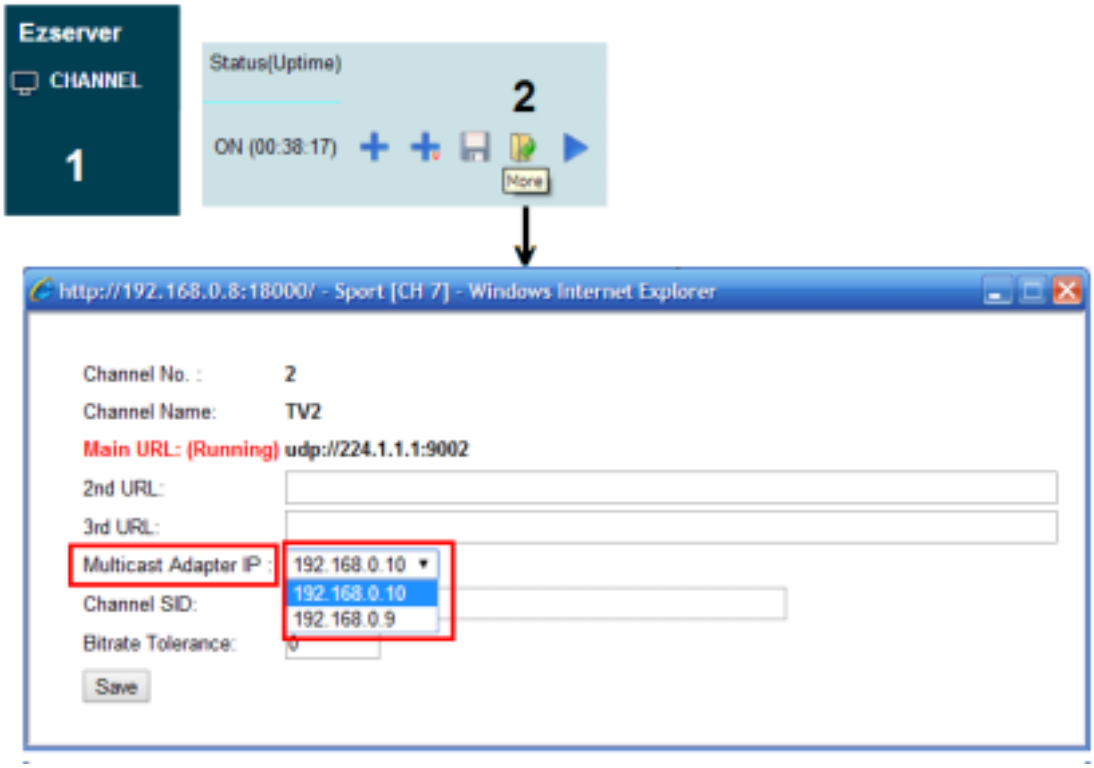
Channel	Channel Name	Media Source
1	Local EZserver CH1	http://robert:1234@189.1.99.4:9000/1.ch
2	Local EZserver CH2	http://robert:1234@189.1.99.4:9000/2.ch
3	Local EZserver CH3	http://robert:1234@189.1.99.4:9000/3.ch

b. Interent Ezserver can provide 3 channels to players

67. Multicast Input from Multiple Network 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:

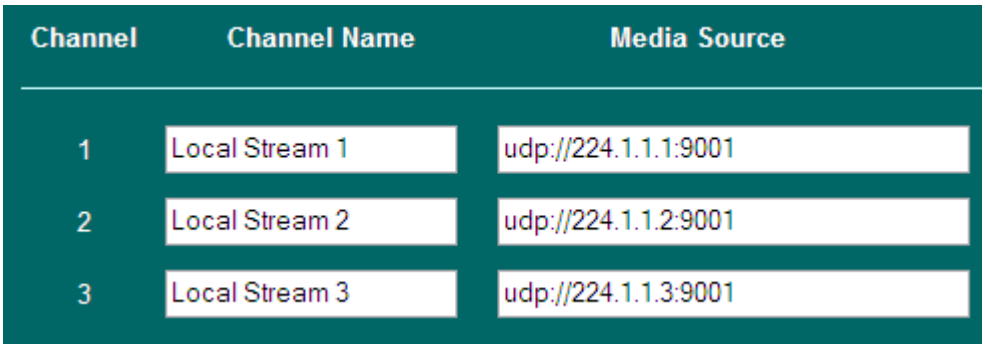
1. Click More icon of the channel as below:



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.



68. Restream Videos from Reverse Proxy (Nginx)

Ezserver supports video streams from reverse proxy by **HTTP protocol** as Nginx, etc…,

There are two video types in configuration file for nginx, one is for MPEG Transport Stream, the other is for Adobe FLV Stream as below:

MP2T stream from Nginx:

```
http {
    include       mime.types;
    default_type  video/mp2t;
    .
    .
    .
    }
```

FLV from Nginx:

```
http {
    include       mime.types;
    default_type  video/x-flv;
    .
    .
    .
    }
```

then you can add **http url links** into Ezserver Channel Panel

69. 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.

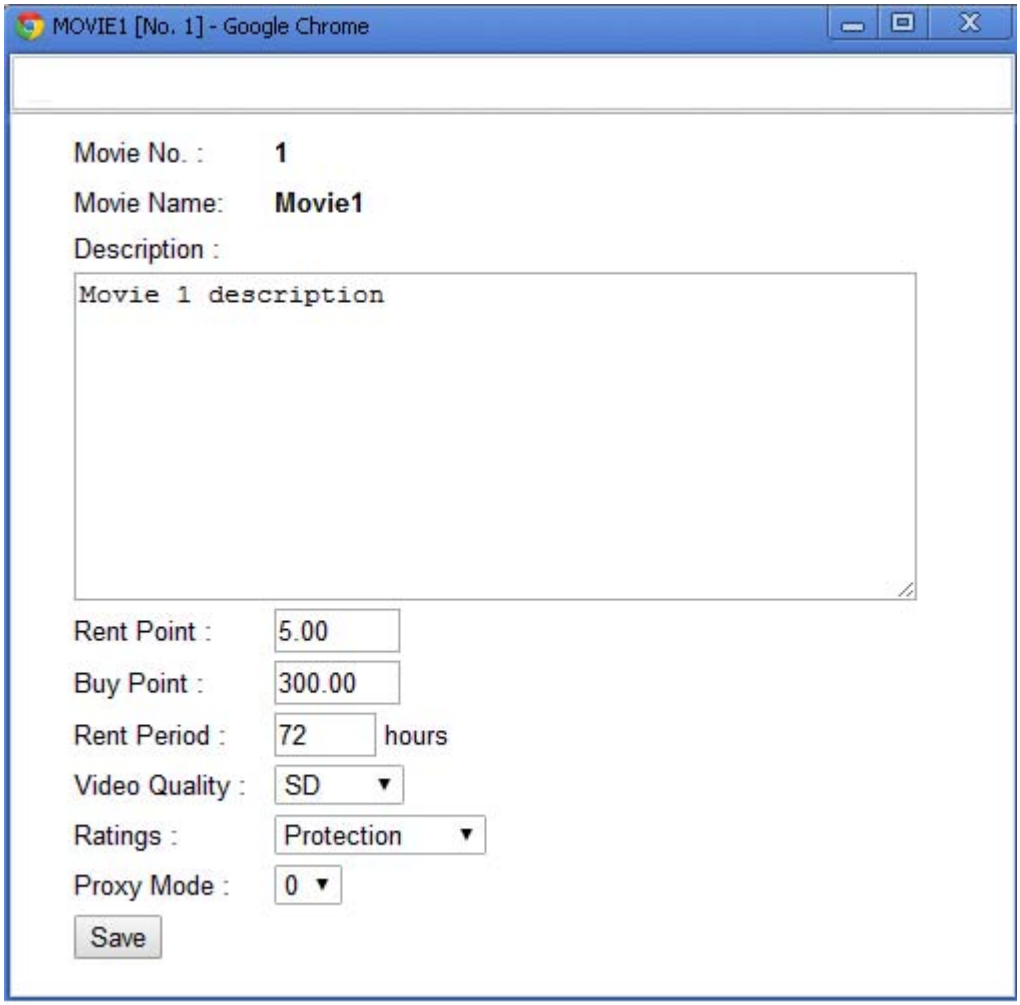
If 3rd ezserver wants get videos from 1st and 2nd ezserver, then its channel media sources as below:

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

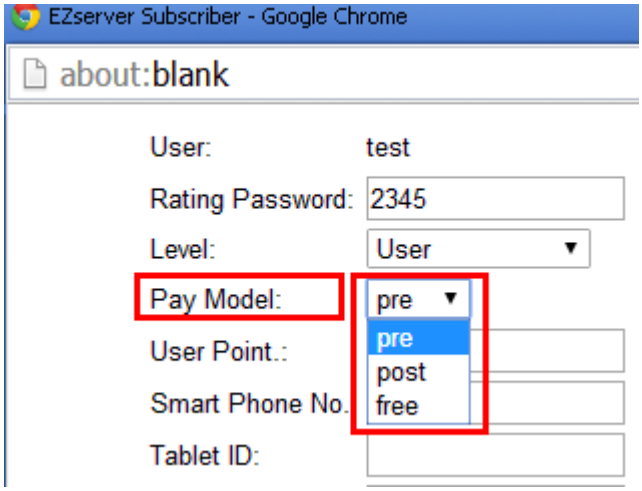
70. Pay Per View

- **Set Movie Point**

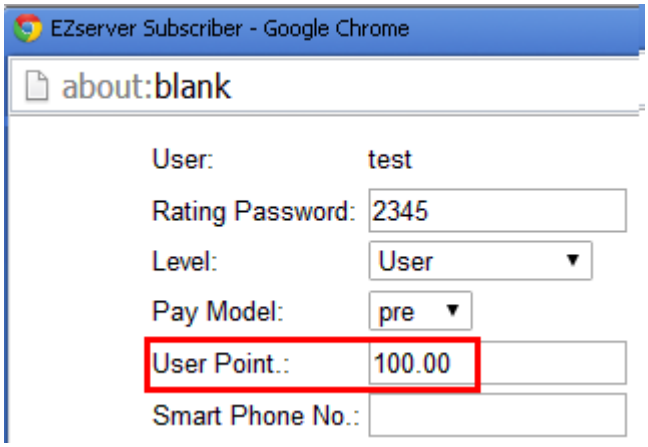
  Click the more button of Movie Panel to set **Rent Point**, **Buy Point**, **Rent Period**, and **Rating**.



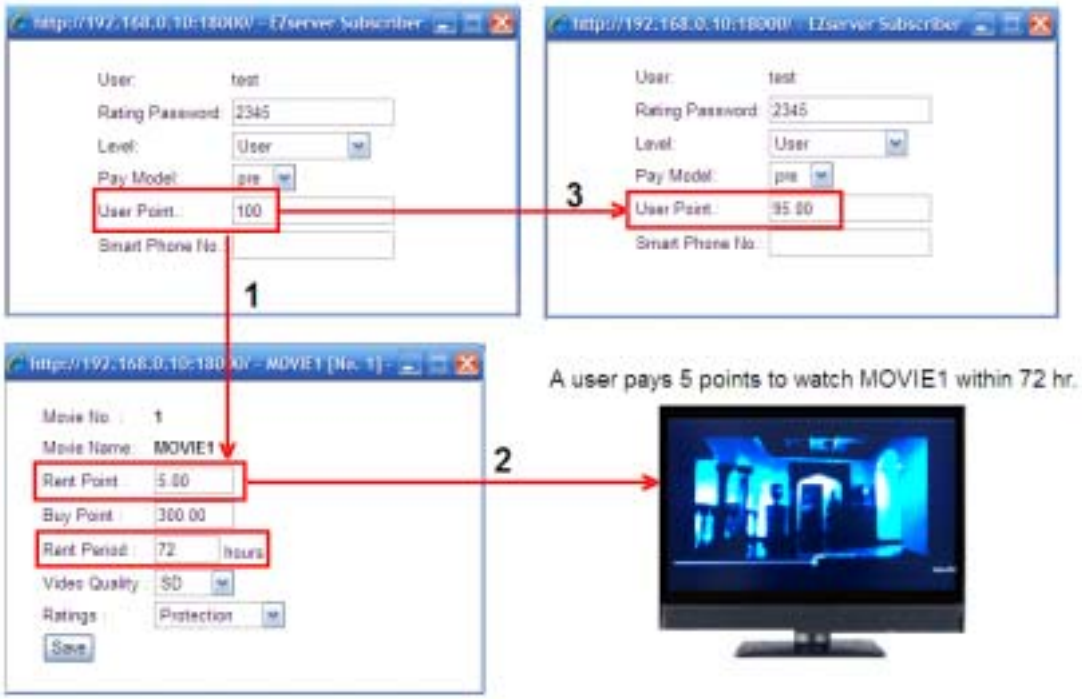
- **Set User Pay Mode**
  - **pre:** Prepaid mode is for internet video service.
  - **post:** Post-paid mode is special for Hotel PPV.
  - **free:** Free mode is for monthly subscription or free service.


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.



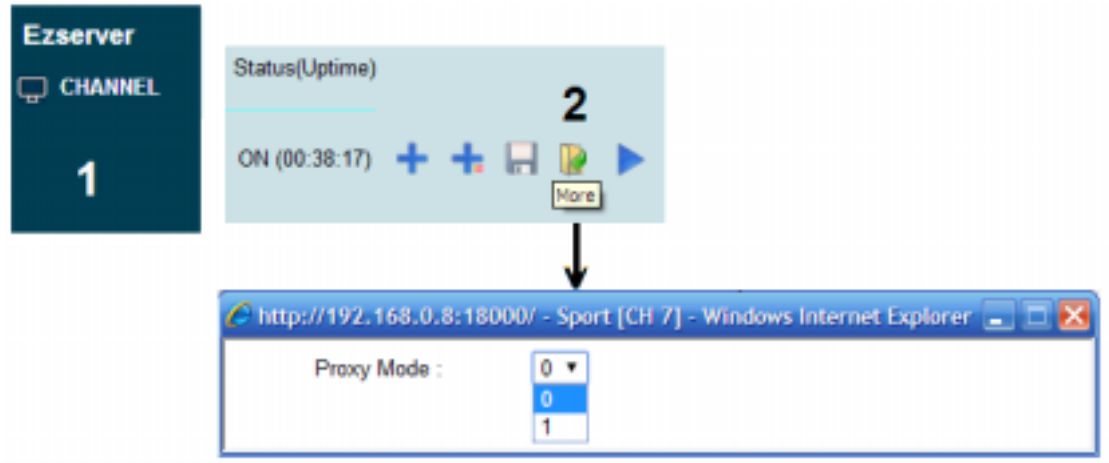
- **PPV Flow**



- **Ezserver PPV API**
  - createtokenbased64
  - destroytoken
  - check_user_ppv
  - charge_user_ppv
  - get_movie_ratings
  - check_user_ratings_password
  - PPV API Example is at
    - http://www.ezhometech.com/ezserver_api_examples.htm

71. Channel Proxy Mode

- Login Panel
- Click Channel Button
- Click More Buttone of a channel
- Set Channel Proxy mode to 1



- Click Save Button

.

72. IP Blocker

IP Blocker blocks IP to reject or allow to access video from Ezserver. Rejected IP and accepted IP is exclusive, so an administrator only selects one of them to do the 2nd-level protection of ezserver.

IP Blocker defines them in a xml file that is stored in ezserver_prof/security/ security_definition.xml

1. Example for rejected IP

<rejected_ip>192.168.0.6</rejected_ip>
<rejected_ip>192.168.0.67</rejected_ip>
<rejected_ip>192.168.0.68</rejected_ip>

2. Example for accepted IP

<accepted_ip>192.168.0.6</accepted_ip>
<accepted_ip>192.168.0.7</accepted_ip>
<accepted_ip>192.168.0.8</accepted_ip>

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

73. 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, so an administrator only selects one of them to do the 2nd-level protection of ezserver.

Player Filter defines them in a xml file that is stored in ezserver_prof/security/ security_definition.xml.

1. Example for rejected player

<rejected_player>VLC</rejected_player>
<rejected_player>NSPlayer</rejected_player>
<rejected_player>null</rejected_player>

2. Example for accepted player

<accepted_player>Mozilla</accepted_player>
<accepted_player>Safari</accepted_player>
<accepted_player>Chrome</accepted_player>
<accepted_player>AppleWebKit</accepted_player>
<accepted_player>MSIE</accepted_player>
<accepted_player>Windows-Media-Player</accepted_player>
<accepted_player>AppleCoreMedia</accepted_player>
<accepted_player>stagefright</accepted_player>

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

74. 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_prof/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.

75. MAC ID Blocker

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

MAC ID Blocker defines them in a xml file that is stored in ezserver_prof/security/ mac_definition.xml.

1. Example

<?xml version="1.0" encoding="iso-8859-1" ?>

<accepted_macid>56bd73e7fe25</accepted_macid>

<accepted_macid>9AE4C6792C73</accepted_macid>

<accepted_macid>F6B820FB1D2A</accepted_macid>

<accepted_macid>004400001bdc</accepted_macid>

76. Adobe Flash Player

For IPTV channels, Ezserver can get Live Video from RTMP links and restream them by HTTP protocol to Adobe Flash Player.

For VOD, Ezserver supports FLV format by HTTP protocol for Adobe Flash Player,too.

- Copy the below codes into your web HTML page that is in ezserver folder and modify the **URL IP.**

A. for Microsoft IE

1. IPTV Channel by HTTP Protocol

```
<html>
<head>
<title>EZserever for RTMP to HTTP</title>
</head>
<body>
<object width="600" height="409">
<param name="allowFullScreen" value="true"></param>
<param name="allowscriptaccess" value="always"></param>
<embed src="/flash_player10_1/StrobeMediaPlayback.swf" type="application/x-shockwave-flash"
allowscriptaccess="always" allowfullscreen="true"    width="600" height="409"
flashvars="src=http://172.16.10.50:8000/ch1.flv?u=test:p=1234"></embed>
</object>
</body>
</html>
```

* The channel syntax is chx.flv, for example, ch1.flv for Channel 1, ch2.flv for Channel 2, etc…

2. Video on Demand by HTTP Protocol

```
<html>
<head>
<title>EZserever for FLV VOD</title>
</head>
<body>
<object width="600" height="409">
<param name="allowFullScreen" value="true"></param>
<param name="allowscriptaccess" value="always"></param>
<embed src="/flash_player10_1/StrobeMediaPlayback.swf" type="application/x-shockwave-flash"
allowscriptaccess="always" allowfullscreen="true"    width="600" height="409"
flashvars="src=http://172.16.10.50:8000/media/videos/1.flv?u=test:p=1234"></embed>
```

```
</object>
</body>
</html>
```

B. for Mozilla Firefox, Google Chrome

1. IPTV Channel by HTTP Protocol

```
<html>
<head>
<title>EZserever for RTMP to HTTP</title>
</head>
<body>
<embed width="600" height="409">
<param name="allowFullScreen" value="true"></param>
<param name="allowscriptaccess" value="always"></param>
<embed src="/flash_player10_1/StrobeMediaPlayback.swf" type="application/x-shockwave-flash"
allowscriptaccess="always" allowfullscreen="true"    width="600" height="409"
flashvars="src=http://172.16.10.50:8000/ch1.flv?u=test:p=1234"></embed>
</embed>
</body>
</html>
```

2. Video on Demand by HTTP Protocol

```
<html>
<head>
<title>EZserever for FLV VOD</title>
</head>
<body>
<embed width="600" height="409">
<param name="allowFullScreen" value="true"></param>
<param name="allowscriptaccess" value="always"></param>
<embed src="/flash_player10_1/StrobeMediaPlayback.swf" type="application/x-shockwave-flash"
allowscriptaccess="always" allowfullscreen="true"    width="600" height="409"
flashvars="src=http://172.16.10.50:8000/media/videos/1.flv?u=test:p=1234"></embed>
</embed>
</body>
</html>
```

77. HTML5 Browser for Video Player

Use HTML5 video tag to connect Ezserver for video streaming as below:

Video on Demand:

```
<html>
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<video width="720" height="480"
src="http://172.16.10.50:8000/media/videos/Movie/mp4/1.mp4?u=test:p=1234"
controls autoplay>
</body>
```

IPTV Channel:

```
<html>
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<video width="720" height="480"
src="http://172.16.10.50:8000/ch1.m3u8?u=test:p=1234" controls autoplay>
</body>
```

78. Web Plug-in Microsoft Media Player

- Install MPEG2/H264 TS codec (download *K-Lite Codec Pack* from internet)
- Copy the below codes into your web HTML page that is in ezserver folder and modify the **URL IP.**

1. IPTV Channel by HTTP Protocol

```
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<OBJECT id="VIDEO" width="320" height="240"
style="position:absolute; left:0;top:0;"
CLASSID="CLSID:6BF52A52-394A-11d3-B153-00C04F79FAA6"
type="application/x-oleobject">
<PARAM NAME="URL" VALUE="http://172.16.10.50:8000/1.ch?u=test:p=1234">
<PARAM NAME="SendPlayStateChangeEvents" VALUE="True">
<PARAM NAME="AutoStart" VALUE="True">
</OBJECT>
</body>
```

2. Video on Demand by HTTP Protocol

```
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<OBJECT id="VIDEO" width="320" height="240"
style="position:absolute; left:0;top:0;"
CLASSID="CLSID:6BF52A52-394A-11d3-B153-00C04F79FAA6"
type="application/x-oleobject">
<PARAM NAME="URL"
VALUE="http://172.16.10.50:8000/media/videos/Movie/1.ts?u=test:p=1234">
<PARAM NAME="SendPlayStateChangeEvents" VALUE="True">
<PARAM NAME="AutoStart" VALUE="True">
</OBJECT>
</body>
```

79. Web Plug-in VLC Player

- Copy the below codes into your web HTML page that is in ezserver folder and modify the **URL IP.**

A. for Microsoft IE

1. IPTV Channel by HTTP Protocol

```
<html>
<head>
<title>Ezserver</title>
</head>
	<body>
	<object type="application/x-vlc-plugin" pluginspage="http://www.videolan.org"
version="VideoLAN.VLCPlugin.2" id="vlc" events="True"
classid="clsid:9BE31822-FDAD-461B-AD51-BE1D1C159921" width="504" height="442" >
	<param name="AutoLoop" value="0">
	<param name="AutoPlay" value="1">
	<param name="Toolbar" value="1">
	<param name="ExtentWidth" value="13335">
	<param name="ExtentHeight" value="11695">
	<param name="MRL"    value="http://172.16.10.50:8000/1.ch?u=test:p=1234">
	<param name="Visible" value="-1">
	<param name="Volume" value="50">
	<param name="StartTime" value="0">
	<param name="BackColor" value="0">
	<param name="FullscreenEnabled" value="-1">
	</object>
</body>
</html>
```

2. Video on Demand by HTTP Protocol

```
<html>
<head>
<title>Ezserver</title>
</head>
	<body>
	<object type="application/x-vlc-plugin" pluginspage="http://www.videolan.org"
version="VideoLAN.VLCPlugin.2" id="vlc" events="True"
classid="clsid:9BE31822-FDAD-461B-AD51-BE1D1C159921" width="504" height="442" >
	<param name="AutoLoop" value="0">
```

```
        <param name="AutoPlay" value="1">
        <param name="Toolbar" value="1">
        <param name="ExtentWidth" value="13335">
        <param name="ExtentHeight" value="11695">
        <param name="MRL"    value="http://172.16.10.50:8000/media/videos/Movie/1.ts?u=test:p=1234">
        <param name="Visible" value="-1">
        <param name="Volume" value="50">
        <param name="StartTime" value="0">
        <param name="BackColor" value="0">
        <param name="FullscreenEnabled" value="-1">
        </object>
</body>
</html>
```

3. IPTV Channel by RTSP Protocol

```
<html>
<head>
<title>Ezserver</title>
</head>
        <body>
        <object type="application/x-vlc-plugin" pluginspage="http://www.videolan.org"
version="VideoLAN.VLCPlugin.2" id="vlc" events="True"
classid="clsid:9BE31822-FDAD-461B-AD51-BE1D1C159921" width="504" height="442" >
        <param name="AutoLoop" value="0">
        <param name="AutoPlay" value="1">
        <param name="Toolbar" value="1">
        <param name="ExtentWidth" value="13335">
        <param name="ExtentHeight" value="11695">
        <param name="MRL"    value="rtsp://172.16.10.50:5544/1.ch?u=test:p=1234">
        <param name="Visible" value="-1">
        <param name="Volume" value="50">
        <param name="StartTime" value="0">
        <param name="BackColor" value="0">
        <param name="FullscreenEnabled" value="-1">
        </object>
</body>
</html>
```

4. Video on Demand by RTSP Protocol

```
<html>
```

```
<head>
<title>Ezserver</title>
</head>
	<body>
	<object type="application/x-vlc-plugin" pluginspage="http://www.videolan.org"
version="VideoLAN.VLCPlugin.2" id="vlc" events="True"
classid="clsid:9BE31822-FDAD-461B-AD51-BE1D1C159921" width="504" height="442" >
	<param name="AutoLoop" value="0">
	<param name="AutoPlay" value="1">
	<param name="Toolbar" value="1">
	<param name="ExtentWidth" value="13335">
	<param name="ExtentHeight" value="11695">
	<param name="MRL"    value="rtsp://172.16.10.50:5544/media/videos/Movie/1.ts?u=test:p=1234">
	<param name="Visible" value="-1">
	<param name="Volume" value="50">
	<param name="StartTime" value="0">
	<param name="BackColor" value="0">
	<param name="FullscreenEnabled" value="-1">
	</object>
</body>
</html>
```

B. for Mozilla Firefox, Google Chrome

1. IPTV Channel by HTTP Protocol

```
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<embed type="application/x-vlc-plugin" name="player" autoplay="no" loop="no"
target="http://172.16.10.50:8000/1.ch?u=test:p=1234">
</body>
```

2. Video on Demand by HTTP Protocol

```
<head>
<title>EZhometech Ezserver</title>
</head>
<body>
<embed type="application/x-vlc-plugin" name="player" autoplay="no" loop="no" target="http://
```

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

</body>

3. IPTV Channel by RTSP Protocol

<head>

<title>EZhometech Ezserver</title>

</head>

<body>

<embed type="application/x-vlc-plugin" name="player" autoplay="no" loop="no" target="rtsp://

172.16.10.50.3:5544/1.ch?u=test:p=1234">

</body>

4. Video on Demand by RTSP Protocol

<head>

<title>EZhometech Ezserver</title>

</head>

<body>

<embed type="application/x-vlc-plugin" name="player" autoplay="no" loop="no" target="rtsp://

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

</body>