

Ezserver Tutorial

Dynamic Streaming Protocol (DSP)

Revision: 09/04/23



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<u>1 Ezserver</u>



Dynamic Streaming Protocol

The "**Dynamic Streaming Protocol**" represents a revolutionary advancement in the world of video streaming. Designed to adapt seamlessly to varying network conditions and server capacities, this protocol sets a new standard for efficiency, scalability, and user experience. Unlike conventional streaming methods, the "Dynamic Streaming Protocol" intelligently combines unicast TCP streaming with peer-to-peer (P2P) unicast UDP streaming over Web 3.0 blockchain technology, dynamically switching between them based on real-time demands. At the outset, the protocol leverages unicast TCP streaming to deliver content to viewers efficiently. As the number of connections approaches the maximum capacity of a single server, the protocol dynamically transitions to P2P unicast UDP streaming.

By employing P2P technology, the "Dynamic Streaming Protocol" optimizes the distribution of streaming content among connected players, alleviating server load and reducing the burden on network resources. This adaptive approach not only ensures consistent, high-quality video delivery but also significantly minimizes buffering and latency issues.

With the "Dynamic Streaming Protocol," video streaming providers can deliver a smooth and reliable viewing experience to a growing audience without compromising on performance. Whether it's for live events, on-demand content, or interactive applications, this protocol paves the way for a more robust, cost-effective, and future-proof video streaming solution. Embrace the future of video streaming with the "Dynamic Streaming Protocol" and unlock the potential of dynamic, efficient, and uninterrupted content delivery like never before.

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Specification:

Web server:

• **Protocol:** HTTP and HTTPS.

Blockchain server:

- Protocol: UDP
- Video format: H264 and H265.
- Audio format: AAC, MP3.

IPTV panel:

- User management: create, modify and delete users.
- Channel management: create, modify and delete channels.
- Movies management: create, modify and delete movies.
- Series management: create, modify and delete series.
- Reseller panel: create, modify and delete his users.

P2P & Multicast player:

• Android App.

Requirement:

Minimum Server Requirement:

- Linux: Ubuntu 20.04(Recommended), Debian, Centos
- Windows: 64-bits
- CPU: 4v Core
- **RAM:** 8GB
- Storage: 160 GB
- Bandwidth: 1Gbps unmetered

Minimum Android Requirement:

- CPU: Dual-Core(1.2xGHz)
- **RAM:** 1GB
- Storage: 1 GB
- Bandwidth: 1Gbps
- Device: STB (recommended), Mobile Phone, Android Smarter TV

Related Information:

Ezserver Official website:

http://www.ezhometech.com/

Ezserver Forum:

https://ezserver.createaforum.com/

Ezserver User Guide website:

http://www.ezhometech.com/html/ezserver user guide.html



1.1 Blockchain Server (Web 3.0)

It includes Channel Unicast Server, Movie Unicast Server, Episode Unicast Server, XMLTV EPG Parser, MPEG TS EPG Parser, MPTS to SPTS Parser, Authorization Security Server and Authentication Server. It uses **Blockchain technology** instead of loader balance, CDN technology.

Additionally, You can create a new private cloud or join other private cloud networks for enhanced DDoS defense and content exchange capabilities as below network configuration.

The blockchain network consists of 4 pivotal nodes, each playing a crucial role in ensuring a robust and secure ecosystem for content delivery. These nodes are **User Server**, **Content Server**, **Proxy Server** and **Reverse Proxy Server**.

A Proxy Node acts *VPN server* to hide the User and Content Servers, or **A Reverse Proxy Node** hides the User Server, guarding it from direct exposure. This enhances security, load balancing, and overall performance.





1.2 Installation and License activation

Get checkout web page after you buy Ezserver License and contact us for installation password.

THANKS YOUR EZSERVER SUBSCRIPTION, PLEASE REFER THE BELOW:
Hello,
A. Linux Ubuntu 20.04 video:
1. Login ssh by root or sudo user
4. if not version 1.1, reinstall openssI by the instructions.
5. cd /home && wget -O Install sh http://www.ezhometech.com/
6. If config //select one network interface for next step
8. Contact sales@ezhometech.com for password.
9 Panel port and Streaming Port must be different.
10. cat /home/ezserver_enterprise/serial_number.bt
11 email /home/ezserver_enterprise/serial_number.txt(size: 97 bytes) with paypal transaction info. to sales@ezhometech.com for license activation.
B. Windows
1. Click here to download it and contact sales@ezhometech.com for unzip password.
2. Refer Readme.bt in zip file.
3 Double Click Ezserver exe to create serial_number.bd.
4 email EZSERVER_ENTERPRISE/SERIAL_NUMBER.txt (size: 97 bytes) with paypal transaction info. to sales@ezhometech.com for license activation.

Windows version:

- Download ezserver_enterprise.zip from the checkout web page.
- Refer Readme.txt in zip file to run Ezserver.exe.
- Email us the ezserver_enterprise/serial_number.txt (size: 74bytes) to active ezserver license.

Note:

Windows version with multiple network cards

- Open ezserver_config.txt and edit network_interface value..
- network_interface value
 - eth0: the first card
 - eth1: the 2nd card
 - eth2: the 3rd card.
- Delete serial_number.txt and double click Ezserver.ext to create new serial_number.txt to us for license reactivation.

Linux:

- Download install.sh from the checkout web page.
- ./install.sh with installation password
- Email us the ezserver_blockchain/serial_number.txt (size: 74bytes) to active Ezserver license.

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1.3 Start / Restart / Shutdown

Windows version:

- Start:
 - ♦ Double Click Ezserver.exe
- Restart: Login Panel and Click the below button



wait 30~60 seconds to relogin panel.

• Shutdown:



Linux Version: ezserver at /home/ezserver_blockchain folder

- Start:
 - ♦ cd /home/ezserver_blockchain
 - ♦ ./start.sh
- Restart:
 - ♦ cd /home/ezserver_blockchain
 - ♦ ./restart.sh
 - ♦ or Login Panel and Click the below button



wait 30~60 seconds to relogin panel.

- Shutdown:
 - ♦ cd /home/ezserver_blockchain
 - ♦ ./shutdown.sh

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1.4 Admin Password





2. IPTV Panel

Admin Panel Input URL: http://domain:port

Reseller Panel URL: http://domain:port/reseller/index.htm



- User / Group / Reseller management: create, modify and delete users, groups, Reseller.
- Channel / EPG management: create, modify, delete or import channels,, epg.
- Movies management: create, modify, delete or import movies.
- Series management: create series.
- User Agent Protection: Add, delete User Agent for Player protection
- Blacklist management: show and delete Locked IP.
- Statistics: show Channel and Movies watched information.
- Setting



2.1 User Management

There are 3 options for player activation.

Click "Add Android Device" and Input Device Mac Address

f Das	shBoard	Users 👻 📃	Channels 🕶	Movies -	∎s
		Add User			
User		Add Android Device			
	User I	Add MAG STB	word	Group ▲ ▼	
		Add Active Code			
1	root			golden	~
2	test	Manage Users		golden	~
3	d8:f3:68:2	Add Group		golden	~
□ 4	44:d3:ad:	Manage Groups		golden	~
5	c6:19:7a:	Add Reseller		golden	~
6	30;95:87:			golden	~
7	30:95:87:	Manage Resellers		golden	~
8	00:1a:79:0	0:00:01		basic	~
	Sh	nowing 1 to 8 of 8 users			

New Android Device

User at	8	MAC Address	00:1A:A1:24:C8:C8
Password		Rating Password	2989770773
Group	basic	✓ Level	User 🗸
Expired Time	1 month	Connection Limit	1
IP		Device Type	android
	Add		Cancel

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• Click "Add User" and Input User name / password



New Use	er			
User at	18		User Name	test
Password	1234		Rating Password	7402473116
Group	basic	~	Level	User 🗸
Expired Time	1 month	~	Connection Limit	1
IP			MAC ID	
	Add			Cancel



• Click "Add Active Code"

DashBoard	Users -	Channels -	Movies 🕶
10.00	Add User		
User	Add Android Device		
User	Add MAG STB	sword	Group▲▼
	Add Active Code		
1 root	Managa Licors		golden
2 test	Manage Users		golden
3 21	Add Group	024	basic

New Acti	ve Code		
User at	18	Active Code	4866693631
Password		Rating Password	1234
Group	basic	✓ Level	User 🗸
Expired Time	1 month	✓ Connection Limit	1
IP		Device Type	activecode
	Add		Cancel

- ♦ Active Code is auto geenerated by system random generator.
- \diamond Each active code is limited by one device.



2.2 Channel Management

2.2.1 Add new channel

1.

nter DashBoa	ard	LUsers 🕶	Cha	nnels 🔻	Movies 🕶	Series ·
			Add Cha	Innel		
Channel			Manage	Channels		
		Channel Nar	Manage	EPG	Vledia Source	
	0 1	RTS 1		dir://media/	videos/Movie/	
	□ 2	TV3		http://bitcdn	-kronehit.bitmovin.co	om/v2/r
	□ 3	RTS 2		dir://media/	videos/Movie/	

2.

Channel at	17	Channel Name :	TV1	
Media Source :	http://stream	nking.dvrdns.org:25461/77/YKKtfo	q0vRn/19957	
con Path :	https://cdn1	iconfinder.com/data/icons/metro-	ui-dock-icon-seticons-by-	d
	1254	tal Turne i	Live	



2.2.2 Import channels by m3u link

1. Click Channels: Manage Channels: Import M3U

nt DashBoa	ard	👤 Users 🕶	Cha	nnels 🔻	Movies 🕶	Series
			Add Cha	annel		
Channel			Manage	Channels		
		Channel Nar	Manage	EPG	Vedia Source	
	0 1	RTS 1		dir://media/	videos/Movie/	
	□ 2	TV3		http://bitcdn	-kronehit.bitmovin.c	om/v2/r
	□ 3	RTS 2		dir://media/	videos/Movie/	

2. Click Import M3U

No Filter 🕶	20	~	Add Channel	C	-
					Multi Refresh
					Import M3U
					Export as XML
					Transcoder

3. Input HTTP M3U Link and Click **Submit** button

hannel after	3	Options	Cache on demand V
13U from HTTP	URL or Local File		
	http://serverin	nort/get php&username=test&pag	ssword=123/&output=mports

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6. if any issue after import by the above way., you can refer the below steps

- Use Chrome to download your m3u link and rename it to new.m3u
- Upload new.m3u into server /home/ezserver_enterprise folder
- Open /home/ezserver_enterprise/channel_definition.xml
- Remove all lines except the 1st line and save it.
- Restart ezserver by ./restart.sh in ssh console again
- Import it again by new URL: http://ezserverIP:panel_port/new.m3u
- Login panel to check it again.



2.3 Movie Management

	bard	👤 Users 👻 💻 Channe	els ▼	Movies -	Serie
				Add Movie	
Movie				Manage Movies	
		Movie Name ▲ ▼		Media Source	•
	1	THE BEST UPCOMING MC	http	s://youtu.be/uAQFxn2	2Ss84
	□ 2	GOLD Trailer (2022)	http	s://youtu.be/9UHxMB	hFy88
	□ 3	NEW MOVIE TRAILERS (2	http	s://youtu.be/LbSeaed	26SI

2.3.1. Add TMDB Movie

ie	TMDB imp	
3	Movie Name :	
	O Folder	
Kids	~	
	Buy Point	
media/videos/gd	Irive	
TMDB poster in 1. Monut goog 2. Each folder i 3. Folder name 4. Select Folder	mport gle driver to ezserver_xxxxx inside gdrive has only one r e is same as TMDB movie na r option.	x/media/videos/gdrive novie (.mp4, .mkv, .ts). ame.
	E 3 Kids media/videos/go TMDB poster i 1. Monut goog 2. Each folder i 3. Folder name 4. Select Folde	Implement of the second sec



2.3.2. Upload Local movies

1. Click Movies: Upload Movies

Channels -	Movies -		Series 🔻	EPG 🔻
	Add Movie			
	Upload Movie	es		
Media Sc	Manage Mov	ies	Icon Path	0 i
file://middleware/video	os/Sports/1.mp4	file://mic	ldleware/pictu	res/Sports/1.
file://middleware/video	file://middleware/videos/Kids/1.flv		Idleware/pictu	res/Kids/1.jp

2. Click Choose Files to select new.m3u and click Submit button.

Upload Movies	
File : Choose Files No file chosen	
Upload	Cancel



2.4 Series Management

-	Users 🔻	Channels -	Movies 🕶	Series - Balancers -
				Add Series
				Manage Series
		Series Name ▲ ▼		Category ▲ ▼
	1	13 Reasons Why		IR SERIES
	2	ROMAN EMPIRE		Series2
	3	THE KOMISKY METH	IOD	IR SERIES
5	Showing 1 to 3 of	3 seriess		

	4	Series Name :	new1
Category :	Series2	Season No. :	4
Rating :		Released Date :	12/12/2022
Icon Path :	file://media/picture	s/action/1.jpg	
	1234		
Description :			
Description :			



2.5 EPG Management

nt DashBoard	Lusers 🕶	Channels 🗸	Movies 🕶	Series 🕶
		Add Channel		
EPG		Manage Channels		
Channel 1 🗸	2022 🗸	Manage EPG		
No.	Start	Time	Stop Time	
1	06:41		06:50	
2	2022/05/04	00:25:00	2022/05/04 00:30:	00
3	2022/05/04	00:30:00	2022/05/04 02:20:	00

There are 3 ways to add EPG to Ezserver, one is from XMLTV URL, the other is from UDP Stream, another is manual insertion.

XMLTV URL

XMLTV EPG URL	http://www.ezhometech.	.com/~karlo/iptv/epg	g.xmla	0	-	🔅 Management	•
System Setting: Max. Streaming No. System Log Lines	1000]	Pagination Limit Number Admin. System Log Lines			User Agenet Blacklist	
Security Setting:						Statistics	
Alert Player Duration	0.001	0	Blacklist Option			Setting	API po
			Save				



UDP Stream

Add channels by multicast URL as below and enable MPEG EPG Extraction option



1000

Admin. System Log Lines

0



Manual insertion

Select DAILY, MONDAY, or others with Start time, then Ezserver will record video by the option into local storage and insert the video into Movie menu.

New Program

ON
DAILY
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY



2.6 User Agent Management

Series - At Balancers -	🌣 Management 🗸	1
	User Agenet	
	Blacklist	
C	Statistics	ed Mode O Accepted Mode
No.	Player Name	
1	stagefright	Ē
2	vlc(linux;)	<u> </u>
3	VLC6	<u></u>
4	NSPlayer	

New User Agent	
User Agent:	
Add	Cancel



2.7 Reseller Management

nt DashBoard	Lusers -	Channels 🕶	Movies -	Series -
	Add User			
Reseller	Manage Users			
No.	Add Group		Ema	ail
1	Manage Groups		@gmai	l.com
2	Add Reseller		@gmai	l.com
3	Managa Decellers		1@gma	il.com
4	Manaye Reseners		1@gma	il.com
5	sr3		@gmai	l.com
6	sr4		@gmai	l.com

No.	7	Total Credit :	1000
Name :	susan	Password :	1234
Group	golden	✓ Level:	Reseller 🗸
Expired Time :	12/31/2024	Email:	susa@gmail.com
Auto Renew			



3 Reseller Panel

Input URL: http://domain:port/reseller/index.htm in Chrome

• Super reseller can create, modify and delete Resellers and users

nt DashBoa	ard	Users -	🐴 Reseller 🕶		
			Add Subreseller		
User			Manage Subresell	ers	
		User Name	Password	Group	
	□ 1	e1	1304693446	basic	•[
	□ 2	e2	1304693446	basic	•][
	3	e3	1304693446	basic	•[
	□ 4	e4	1304693446	basic	•

• **Reseller** can create, modify and delete users only.

n Dash	Board	👱 Users 🗸		
User		Add User Manage Users		
		User Name	Password	Gr
	□ <mark>1</mark>	rt51	9091880686	basic
	2	rt52	9091880686	basic
		rt53	9091880686	basic



4 DSP Players

DSP Player is an **Blockchain P2P Player** that plays channels, movies and series from Ezserver for internet users.

Features:

- TV, Movie and Series
- Support Youtube Channel Links
- EPG and Catch up TV
- Parent Control of adult content
- MAC ID Protection
- Channel Video Format: MPEG2/H264 Transport Stream
- Channel Audio Format: MP3/AAC, ADTS Stream
- Movie Format: MP4, MKV

<u>Main Menu</u>

حد	All	RTS 1	00:35 Vesti RTS	
Ē	Favorites	RTS 2	00:40 Vratolomna igra	
	24 HORAS INFANTIL	A FAZENDA 12 HD	(1989)	
Ľ	A FAZENDA 12	ae hd	02:20 Ono kao ljubav (2009)	
0	CANAIS ABERTOS	A&E HD 2	03:11 Bili smo prvaci	
0	DOCUMENTARIOS	AMC H265 DUAL AUDIO	sveta	
0	ESPORTES	AMC HD	03:36 Putopis	
0	FILMES E SERIES	AMC HD2	04:03 Oko magazin	
6	GLOBO	ANIMAL PLANET FHD	04:33 Kvadratura kruga	
0	нво	ANIMAL PLANET H265	05:03 Institucije Srbije u Velikom ratu	
	INFANTIL	ANIMAL PLANET HD	05:48 Verski kalendar	



Account activation supports 3 options as below:

Account



- Activate by code: Login by Active code with device mac address
- Login User/Password: Login by User name and password
- Activate by Mac Address : Login by device mac address.

Activate by code





Login User/Password





- Refresh button : Refresh content
- Auto Start : Enable App start when android device power on
- Channel / Movie Player : Support VLC and Exo Player



5 Other Panel to Ezserver

Migrate Xtream Users and Resllers to Ezserver

• Click management:Import Xtream DB button

•	ata Balancers -	🏟 Management 🗸	
		User Agent	
		Blacklist	
		Statistics	
		Import Xtream DB	345
		Setting	Active Use

- Upload xtream_iptvpro.sql
- Click Submit button

Import Xtream DB		
Local File :	Choose Files xtream_iptvpro.sql	
Submit	Cancel	

*** Restart ezserver after import xtream DB. ***



6 Blockchain Node Setting

The blockchain network consists of 4 pivotal nodes, each playing a crucial role in ensuring a robust and secure ecosystem for content delivery. These nodes are **User Server**, **Content Server**, **Proxy Server** and **Reverse Proxy Server**

- **User node** : management user information.
- **Content node** : It can be for channel or movie streaming.
- **Reverse Proxy node** : hide the User.
- **Proxy node** : acts VPN server to hide the User and Content Servers.
- Proxy node (www.your_domain_name.com)
 - Add proxy_server=1 in ezserver_blockchain/ezserver_config.txt
 - ♦ Delete all users except root and channels, movies and series.
 - ♦ Enable Main / Slave Node option
 - ♦ Define Control port

Main / Slave Node	•	
Control port	17100	0

- Reverse Proxy node (www.your_domain_name.com)
 - ♦ Delete all users except root and channels, movies and series.
 - ♦ Enable Main / Slave Node option
 - ♦ Define Control port

Main / Slave Node



Control port



• User / Content Node

- ♦ Disable Main / Slave Node option
- ♦ Input User Node Domain Name
- ♦ Input User Node Control port

Main / Slave Node	O	
Main Node Domain Name / IP	www.your_domain_name.com	0
Main Control port	17100	0

When a server has full connections, Ezserver invokes Blockchain function to let other servers serve the new connection and shows protocol **BVP** instead of **HTTP** in current server and **BCP** in another server.

CNN The one	e 1001th connectio e of Europe servers	n requests CNN channel,	it will be fowrad	ed to
On Demand		HLS		
Channel SID		EPG Channel ID	TV9	
User Agent	Ezhometech(Ezser	ver Bitrate Tolerance	0.99	
Catch Up Days	0	Proxy Mode	Disabled	~
Input Adapter	127.0.0.1	 AES Encryption 		
Blockchain Region	Europe	Blockchain Group ID	18097	
2nd URL				
3rd URL				



7 DSP Setting

DSP setting sets connection threadhold value in order to switch video streaming mode to P2P mode to save server resource load and download bandwidth.

- Administrator sets DSP rate to 0, video streaming is **pure IPTV video streaming**.
- Administrator Sets it to 1, video streaming is **pure P2P video streaming**.

System Setting: Max. Streaming No.	2000	
Dynamic Streaming Rate (System switches to P2P mode up to 2000 con	0.00 nections.)	Without P2P
Dynamic Streaming Rate (System switches to P2P mode up to 1000 con	0.50 nections.)	With P2P at 1000 con.
Dynamic Streaming Rate (System switches to P2P mode up to 0 connect	1.00 tions.)	Full P2P



8 Work Folder

Assign movie and series folder path of Content Nodes in Main server Panel.

• Check Content Nodes in main server first



Nodes				
	No.	Node	Region	Group ID
	1	192.168.0.9	Asia	18000
	2	192.168.0.5	Europe	18000
	Showing 1 to 2 of 2 nodes			

• Create Work Folder of Content Nodes in main server





Create Movie Folder

New Folder	
Server Name	192.168.0.5
Folder Type	Movie
Selected path	/home/media
Enabled	
Add	Cancel

- Add new folder (/home/media) for Movie that ezserver auto refreshes movie per hour
 - Hider In My House (2023) [imdb-tt16531670]
 Hider.In.My.House.2023.1080p.WEB-DL.EAC3.2.0.h264-Kitsune.mkv
 Welcome to Valentine (2023) [imdb-tt25391092]
 Welcome.to.Valentine.2023.PCOK.1080p.WEB-DL.EAC3.5.1.x264-NTb.mkv
 Monster Hunter (2020)
 Luckless in Love (2023) [imdb-tt21212308]
 Hider In My House (2022) [imdb-tt16531670]
 - How to add films into movie folder
 - ♦ Create folder name by movie name
 - ♦ Upload one film into the movie folder



Create Series Folder

New Folder		
Server Name	192.168.0.5	~
Folder Type	Series	~
Selected path	/home/series	
Enabled		
Add	Cancel	

- Add new folder (/home/series) for Series that ezserver auto refreshes series per hour
- /home/series has the below kinds of files
- used US S01E01 WEBDL-720p.mkv
 used US S01E02 WEBDL-720p.mp4
 bhagya-lakshmi S01E05 WEBDL-720p.mp4
 bhagya-lakshmi S01E04 WEBDL-720p.mp4
 bhagya-lakshmi S01E03 WEBDL-720p.mp4
 bhagya-lakshmi S01E02 WEBDL-720p.mp4
 bhagya-lakshmi S01E02 WEBDL-720p.mp4
 bhagya-lakshmi S01E01 WEBDL-720p.mp4