

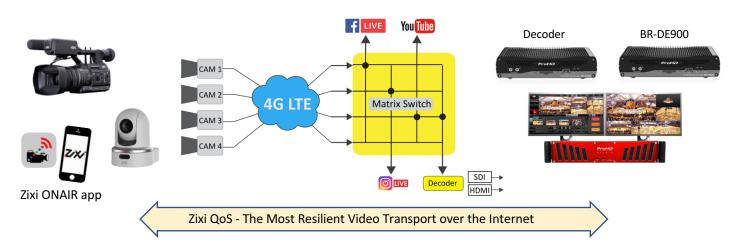
# zRAMP





# **Quick Setup Guide**

The zRAMP Video-over-IP server accepts Zixi transport protocol from JVC cameras and Zixi ONAIR iOS/Android app. Zixi protocol utilizes Forward Error Correction (FEC), Repeat Request (ARQ) and Adaptive Bit Rate (ABR) to compensate for up to 30-40% of packet loss due to network congestion, limited bandwidth and excessive jitter. The zRAMP outputs UDP, RTP, RTP+SMPTE FEC and RTMP streams to hardware/software decoders, CDNs (Facebook, YouTube etc.) and SW video switchers (ProHD Studio, vMix).



The zRAMP is a Network Attached Appliance and is controlled/operated via browser from another PC or smart device on the same network or via WAN / Internet. Recommended browsers: Chrome, Mozilla Firefox. (Please, do not connect a monitor to the DisplayPort, only Linux login will be displayed.)

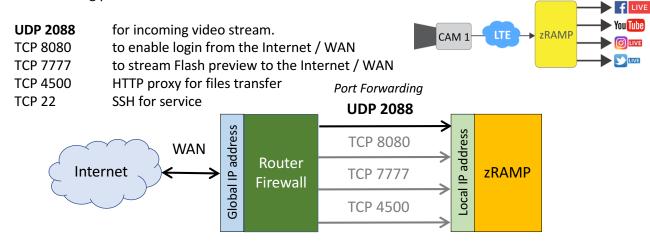
# zRAMP login:

Setup PC network adapter: IP = 192.168.1.77 (or similar), Netmask = 255.255.255.0 Launch Chrome browser, type http://192.168.1.7:8080, Login = admin Password = jvc1234



# **Connection via WAN / Internet**

In most cases, the zRAMP would be connected to the Internet via router/firewall gateway. The following ports need to be forwarded to the zRAMP local IP address:



#### zRAMP operation – adding new Inputs:

The JVC camera *Streaming Server* settings should be matched with the *Stream ID* on the zRAMP. **Camera settings:** Menu – System – Network – Settings – Live streaming – Server – Streaming Server **zRAMP settings:** Inputs - New Input – Push

Latency is always fixed and selected in the camera settings depending on the quality of connection:

Camera Settings	Latency	Packet Loss Tolerance	Algorithm	Recommended for:	
Min	500 ms	5%		Bi-directional conversation	
Low	900 ms	10%	FEC, ARQ, ABR	BI-directional conversation	
Medium	4 sec	30%	ARQ, ABR	Fuent coverage	
High	10 sec	40-50%	ARQ, ABR	Event coverage	

# JVC Camera settings

#### zRAMP settings

Streaming Serv	erSet 💷								-					Add new input stream
Alias	zRAMP		19	2.	168	8.1	. /	2	ZRA	MF	' IP	adc	ress	Stream ID: CAM1
Type Destination Address	ZIXI	0	) (	1	2	3	4	5	6	7	8	9	÷	Max Outputs: Unlimited Show in Matrix:
Destination Port	2088	ā	a	=+	=++=	=	=				i		→	Push • Pull UDP File RTMP RTSP HLS
Stream ID	CAM1	ŀ	<	l	<b>n</b>	n	0	р	q	r	S	t	$\langle X \rangle$	Stream parameters Password: 1234
Password Latency	**** Low	L	1	v١	N	x	y	z	-	ŀ				Latency [ms]: Remote configuration
Adaptive Bit Rate	Off				Se	t					Car	nce		Point to point:     Disable P2P fallback:       ID of high priority source:     None

Stream ID and Password settings on the camera Streaming Server and zRAMP input should be identical. The zRAMP IP address should be "Global" when running server behind the router/firewall. Start streaming - Input Status should switch to "connected" (green), Bitrate and IP address will be indicated.

STATUS	INPUTS	OUTPUTS	SETTINGS	EVENT LOG					LOGOU
nputs Se	earch Inputs	×	¢ م	]				+ New Input	₽ Reload
Status	▲ ID	Туре	Source	# Bitrate[kbps]	🛊 Up Time	TR 101 290	¢ Error	Outputs	Actions
Offline	CAM1	Push		0	00:00:00	Off	None	0	<b>*</b>
Offline	CAM2	Push		0	00:00:00	Off	None	Start	<b>*</b> •
Offline	CAM3	Push		0	00:00:00	Off	None	Edit	<b>*</b>
Offline	ONAIR	Push		0	00:00:00	Off	None	Delete	<b>e</b> •
Connecter	d TEST	File	test.ts	2589	00:00:07	Off	None	New Output	

# zRAMP operation – adding Outputs:

#### RTMP Output for YouTube

New output			1
Dutput Name:	YouTube		
Input Stream:	CAM1	*	
Show in Matrix:			
	IO PushO HT	TP Push	S3 Bucket
Output parameters			
• f			
	rtmp://a.rtmp.youtube.c	om/live2	
	rtmp://a.rtmp.youtube.c	om/live2	
Backup URL:	rtmp://a.rtmp.youtube.c	om/live2	
Backup URL: Stream name:		om/live2	
Backup URL: Stream name: Username:		om/live2	
Backup URL: Stream name: Username: Password:		om/live2	
Backup URL: Stream name: Username: Password: Bitrate [kbps]:	c3ea-ke71-8vju-abac	om/live2	
Backup URL: Stream name: Username: Password: Bitrate [kbps]: Reconnect [sec]:	c3ea-ke71-8vju-abac	om/live2	
URL (rtmp://host:[port/app): Backup URL: Stream name: Username: Password: Bitrate [kbps]: Reconnect [sec]: Send timecode: Disconnect (i finactive:	c3ea-ke71-8vju-abac	om/live2	

#### UDP Output for ProHD Studio / vMix

New output					1			
Output Name:	Pro	HD_						
Input Stream: Show in Matrix:	CA	M1		•				
	Pull	Pull Push		HTTP Push	S3 Bucket			
Output parameters Host:	1:	92.16	8.1.67	vMix IP address				
Port:	5	000	TTL:					
Smoothing [ms]: RTP:	0	)						
Bind to IP:		Any		\$				
Local port: Don't fragment:		1						
ReMuxing								
Enable decryption	0							

### RTP+SMPTE FEC Output for BR-DE900 decoder

Output Name:	BR-I	DE900					
Input Stream:	CAN	11		v			
Show in Matrix:							
	ull	Push	Н	TTP	Push	S3 Bucket	
Output parameters					De	oder IP	
Host:		192.168	3.1.5		address		
Port:		6000	TT	L:	add	lress	
Smoothing [ms]:		0					
RTP:							
SMPTE 2022 FEC:		2D	ŧ				
Rows(D) X Columns(L):		6	Х	6			
Bind to IP:		Any			\$		
Local port:		0					
Don't fragment:							
ReMuxing							

The zRAMP software is based on the BR-800 ProHD Broadcaster.

Both IP Video servers support the same Zixi protocol with the same packet loss compensation.

The amount and supported protocols for inputs/outputs and features are compared in the following table:

	<ul> <li>2₩ = = * <sup>NodG</sup> (MM<sup>0</sup>)</li> </ul>	ProHD BROADCASTER
	zRAMP-2/4	BR-800 ProHD Broadcaster
Inputs	·	
Zixi Push from JVC / ProHD cameras and encoders	2/4*	
Zixi ONAIR App for iOS/Android	2/4*	
Zixi Feeder for Win/OSX/Linux		
Zixi Pull from another server		
MPEG-TS over UDP		L la linaite d
MPEG-TS over RTP with SMPTE-2022		Unlimited
RTMP pull from CDNs and/or other sources	no	From any source
RTMP push		
RTMPS		
RTSP input		
Pre-recorded TS files from local HDD	yes	1
* zRAMP-2 features two inputs, zRAMP-4 - four inputs		
Outputs		
Zixi TS Push to another server	20	
Zixi TS Pull from BR-DE900 or Return Video decoder	no	
MPEG-TS over UDP		
MPEG-TS over RTP with SMPTE-2022		
RTMP push to CDNs and media servers		
Apple HTTP Live Streaming (HLS)		Unlimited
Adobe HTTP Dynamic Streaming (HDS)	2/4**	Offinitied
FLV over HTTP (HTTP pseudo-streaming)	2/4	
MPEG-DASH (DASH264 profile)		
SHOUTcast (audio only)		
Recording TS files to local HDD		
Re-multiplex output streams to strict CBR		
** zRAMP-2 features two outputs, zRAMP-4 - four outputs	S	
Features		
Robust error correction + adaptive bitrate		
Network bonding with hit-less fail-over		
Recording streams as MPEG-TS files	yes	
Matrix and flash preview of input/output streams	yes	
Secure and rapid file transfer		yes
Real-time network and content analysis		
Transport Stream Analyzer – ETSI TR 101-290		
Time-shift – delayed broadcasting of input stream	no	
Clustering and load balancing		

License		
Perpetual, one-time fee license	yes	
Annual Subscription with metered output		yes