

# Vemotion Encoder and Streaming Server for Local Viewing Support Guide

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### CHANGE HISTORY

Version	Date	Change Summary	Author
V1.0	25.04.2016	Initial Draft	TPL

#### FOREWARD

Vemotion specialise in the acquisition of analogue and IP video streams, compressing via H264 and transmission of high quality video over low bandwidth and unreliable networks, as well a cost effective delivery over high bandwidth providers. These networks include, but are not limited to Cellular, Satellite and broadband bearers. Vemotion gives the ability to switch dynamically between low and high bandwidth video streams, adjusting the video quality to suit. HD 1080p streams are catered for and ONVIF compatibility allows integration into Video Management Software (VMS) platforms. Viewing the transmitted stream can be done via a multitude of platforms, from mobile phones to command and control rooms.

This handbook provides a reference for users of the Vemotion applications. It aims to help you install and set up the Vemotion software.

The system is flexible and may be tailored to meet specific business requirements.

For further details or if you need any extra support please contact Vemotion.

#### HOW DOES VEMOTION WORK?

Vemotion specialise in innovative video compression enabling multiple live video channels to be transmitted to a server and then multi cast to a platform of your choice. You can allocate available bandwidth between channels, increasing picture resolution to view a scene of particular interest.



#### **VEMOTION SOFTWARE**

There are many software applications that work in conjunction with one another allowing video streams to be taken from any source and transmitted to the viewing client.

# Vemotion Video Server (VVS)



The VVS allows you to program how many cameras you wish the Encoder to have access to by adding a channel per camera. The VVS also allows you to record the camera of your choice at the specific resolution, bit rate & frame rate desired. It also permits you to add either analogue or IP Cameras. It then sends the streams to the Vemotion Encoder software to begin processing.

#### Vemotion Encoder (VE)



The Vemotion Encoder transcodes live video captured from the camera into highly-compressed data finding a perfect balance between quality and compression.

Local User Interface (LUI) – VB3X Viewer



The VB3X viewer will allow you to connect directly to the Vemotion Video Server to enable a live stream from the camera to be viewed on the Hardware Encoder itself acting as a PC or to enable the video feed to be viewed on an HD screen.

#### Vemotion Streaming Server (VSS)



The Vemotion Stream Server is used to consolidate and distribute the Vemotion video streams.

### Vemotion V264 Player and Vemotion Viewer



This is the software that displays the live video on the viewing device of your choice, be it CCTV control rooms, PC, laptop or Android & iOS phones or tablet. The software not only displays the live video, it also enables various control options.

#### Vemotion Android Encoder (VB-10)



This Vemotion Android Encoder will allow your phone to become the Encoder and stream video to the Streaming Server.

#### Vemotion Proxy



This software allows connection to a network video stream from the Vemotion Streaming Server from ONVIF/RTSP and web clients. These clients can be viewing management software, to recording devices and the video stream is in an open format compared to the stream that is viewed within the Vemotion Viewers and Players.

# Vemotion Encoder and Streaming Server (VSS) for Local Viewing

# Support Guide

#### STREAMING SERVER SET UP ON THE HARDWARE ENCODER

In some cases you may want to view the video stream locally rather than over a cellular network. For this example we shall choose Wi-Fi for the Network bearer. Wi-Fi is normally activated in all encoders. If your product does not have Wi-Fi please contact support before setting up.

On the desk top there should be an icon called the Vemotion Streaming Server;



If it is not on your desk top go to the following;

✓ My Computer VBOX168 Local Disk (C:) wininstVEM Vemotion Software streamingserver 

Right Click on the zip file. 7-zip and extract to, as below;



Once unzipped, click on the folder and right click;



Run that and click next buttons and finally the close button.

#### LAUNCHING THE VSS

Double-click the Vemotion Streaming Server Icon from within Windows or the shortcut on the Desktop

E. Vemotion Streaming	Server					[	
Add Stream Edit Stream	Delete Stream	Add User E	dit User Delet	e User a	ient licenses	Encoder licenses	About
Streams						Users	
🗄 💓 Server						User	
	Error						
	⚠	Your licence	file is missing. C	iontact Vem	otion for licen	ing details.	
Connections							
Connected	Steam	User	Address	Id			

#### Licence Key

Select 'OK' in the error box above and the following screen will appear.

Activation - streaming server	$\mathbf{X}$
0012F0A004E8	
key:	
OK Cancel	5 I
	0012F0A004E8 key: OK Cancel

The Machine Serial code shown should be emailed to orders@vemotion.com with the Licence Key request:

- The Licence Key will be sent to you by Vemotion
- Copy and paste the Licence Key into the Licence Key window
- Click 'OK'

You will now have access to the Streaming Server.

#### Adding Video Streams

Click add stream, a box will appear named add new stream.

trea A	ld New Stream X		Users
+	Basic Properties Stream Name VB-35-168-E2-HD Maximum Connections 100 = Stream Id B-35-168-e2		user1
inne C	Notifications Comma separated list of email addresses for stream notifications  For Encoder Connections/Disconnections  For Encoder Alam Events	cryption	

When you are adding a stream you will need to specify a number of details:

#### Stream Name

Enter the stream name, it is sometimes helpful to the Serial number of the Encoder. This is the name of the stream that will be presented to the user in the list of streams to connect to.

#### **Maximum connections**

By default, multiple users can view the same stream. You can restrict the number of concurrent users that are able to connect to the stream here, simply set the required number in the box.

#### Stream ID

A stream ID will automatically and randomly be assigned. The Stream ID is used by encoders to identify which stream to connect to. This can be any string and the relevant encoder must be configured to match.

#### Notifications

You can enter a list of comma separated email addresses in here. Recipients will be sent an email notification when an encoder connects or disconnects from a stream channel on the server or when an alarm has been activated through the encoder. A suitable mail server must be configured for this feature to function.

Click 'OK' to save. The stream will be added to the VSS Streams window and also show details including the Stream Name and ID if you expand the drop down box.

#### Adding Users

Users represent operatives who want to view live video streams through the Vemotion Streaming Server. By default there are no users added to the system.

Click add user and the add user box will appear.

er		Stream Acc	ess
ame	User 2	VB-3	5-168-E1-SD
assword	user2 Rando	nise VB-3	5-168-E2-HD
efault Stream	(None)		
missions			
PTZ Contro	И		
Switch Can	nera		
Change Vid	leo Quality		
Assign Vide	eo To Users		
Recordings	/Event Access		
Recordings	/Event Deletion		
Audio Outp	ut Control		
Alarm Outp	ut Control		
User is Adr	nin		
			Select All
			or 1 o i

For each user, a username and password must be configured in the server and these must be used in the Vemotion viewer application in order for the user to be able to access and view video streams.

#### User

This is the username that a user will need to access video streams.

#### Password

This is the password that a user will need to access video streams. If required a random password can be generated by clicking the Randomise button.

#### **Default Stream**

When connecting to the server using a Vemotion Viewer, the user can opt to connect to a specific video stream, if they are allowed to, or the 'Ops Channel' if a default stream is specified.

When connecting to the 'Ops Channel', the video stream presented to the user upon connection is called the 'Default Stream' and is set using this option. Select an appropriate video stream.

When connected to the Ops Channel, the stream that the user is watching can be changed dynamically by the Vemotion Stream Manager application.

Note: To allow the user access to the Ops Channel, set a default stream. If no default stream is set, the Ops Channel will not be presented to the user for selection.

#### Permissions

Set up here what you wish you user to be able to do with the cameras by ticking the relevant boxes

#### Stream access

This section allows you to control which users can connect and view which video streams, if any. Users will always be able to access non-restricted video streams. (See adding video stream – Authentication required option).

To allow a user access to a particular restricted video stream, check the checkbox next to the stream.

To remove access from the user, uncheck the relevant box.

To allow access to all streams tick select all box

**Note:** If the user is not allowed access to any restricted streams and there are no unrestricted streams on the system and the user does not have a default stream set, then they will see no video streams and be unable to view any video. Once added the user will be visible in the users section of the screen.

#### Connections

The connections window of the VSS shows details of Vemotion Viewers and Vemotion Managers connected to the VSS. The columns are as follows;

#### Connected

Shows the time and date that a connection was made

#### Stream

Shows the video stream that the user has connected to

#### User

Shows the user who has connected to a video stream

#### Address

Shows IP address of the connection

#### ID

This is an identifier enabling developers to tie up a connection with debug/log entries. It has little relevance during normal use

#### SETTING UP THE ENCODER SOFTWARE

Click on the Vemotion encoder icon.



Project – open new project



Click on profiles and either add default profiles or add profile.

Project -	Profiles +	Options 🚺 About	vemotic
	Add Profile		Enco
Profiles	Clone Profile	Zoom 100%. Display	Both
-			
		Input	Output

Add profile wizard page

Project Pro Add Profile Wiza	rd 👱
Profiles	Welcome Create a new encoder profile.
	Always show this welcome page
	K Back Next > Cancel

#### Click next

#### Source

ource					
Select the so are listed.	urces to use for e	encoding in this	s profile, (	Only currently in	nstalled device:
Source from:	Devices C	File			
Video	Vemotion Shar	ed Memory Sou	irce	•	1
	Format.	. Crosst	er	Configure	Ì
				-	1
D A. 45	r				I
I AUdio	1			<u>.</u>	
				Configure	]
			Г	Apply these s	ettinos to all on

When you run an encoder you must tell the encoder where this shared memory is and this is the Vemotion shared memory source on the encoder app.

#### <u>Format</u>

The Format button allows you to configure the camera size into the encoder and also allows you to change the frame rate to what you want to encode. Click apply when you have selected your choices.

d Protile Wizard			
Properties		×	Lices
SMSource Pin Properties			1003
Video Stream			
Color space / Compression :	1420	•	
Output size :	176 x 144 (11:9)	-	
	160 x 90 (16:9)	-T3	
Frame rate :	160 x 120 (4:3)		
	256 x 144 (16:9)		
	320 x 180 (16:9)		
	-352 x 288 (11:9)	1. Sec. 1. Sec. 1.	
	512 x 288 (16:9)		
ОК	1640 x 360 (16:9) 640 x 480 (4:3)	Apply	
	704 x 576 (11:9)		
	720 x 576 (5:4)	se settinas to	all profi
	1280 x 720 (16:9)		
	1280 x 960 (4:3)	Ca	ancel
	1600 x 900 (16:9)		
Not Co	chinected	Not Sending	

#### <u>Configure</u>

The configure button in the encoder app tells you which camera to go to as default. Vemotion 1 signifies channel 1 on the VVS.



You have the option to apply to all profiles and then select next.

#### Camera Control

Drop down list of camera choices.

Camara Controllar	INere	-
Comora Controllor	None	-14
	Apec	
	Axis IP	
	Cleartone	
	Conexant	
	Forward Vision	
	Foscam	
	NetVu DVR	
	Onvif	
	Panasonic IP	
	Pelco-D Pelco-P	
	Petards Server	
	Serial Passthrough	and the second se
		CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR

At this point click on Vemotion source on drop down which then gives you the ability of multiple channels on encoder rather than one. This will take you to;

mera Controller	otion Source	•	
ameras 1-8 Cameras	9-16 Camer	as 17-24 Cameras 25-3.	2   Playback
Camera 1	ptz	Quad	ptz
Camera 2	ptz	Camera 6	ptz
Camera 3	ptz	Camera 7	ptz
Camera 4	ptz	Camera 8	ptz

Shared memory sources are directly related to camera inputs. So this camera control relates to the VVS that you have input each camera to. Channel 1,2,3,4 on the Vemotion Video Server, shown below relate to Camera 1-4 on the Vemotion Encoder Camera Control tab above. Also remember to add a Quad as channel 5 should you wish a quad view.

	Channel	Туре	Name	-	Recording File	Error	
~	1	TW68XX	Channel 1	9			
~	2	TW68XX	Channel 2	۲			
~	3	TW68XX	Channel 3	0			
1	4	TW68XX	Channel 4	٠			
~	5	Quad	Channel 5	9			
~	6	RTSP	Channel 6	•		Timeout	
×	253	Playback	Channel 253 V				
×	254	Playback	Channel 254 I	í, l			
×	255	Playback	Channel 255 S				

Each camera has its own shared memory.

Camera Controller	motion Source	
Cameras 1-8 Cameras	s 9-16   Cameras 17-24   Cameras 25-3	32   Playback
Camera 1	ptz 🔽 Quad	ptz
Camera 2	ptz Camera 6	ptz
Camera 3	ptz Camera 7	ptz
Camera 4	ptz Camera 8	ptz

To set individual PTZ control cameras press PTZ. This takes you to the

#### Enter Input Controller page

Choose the Camera controller that relates to the camera.

amera Controller	None	
	None	
	Axis IP	
	Canon	
	Forward Vision	
	Next DVD	
	Opvif	
	Panasonic IP	
	Pelco-D	
	Pelco-P	
	Petards Server	
	Serial Passthrough	
	Sonic	
	Tenvis	
	Videcon DVR	

This then takes you to the page where by you can add the specifics, most are already pre-set however make sure the com port is correct to the hardware unit you are working with.

Pelco-P	-	
1 🛨		Auxiliaries
9600 💌		
8 💌		
None 💌		
One 💌		
1 🛨		
	ок	Cancel
	1 + 9600 + 8 + None + One + 1 +	1

Highlight the controller/protocol of your camera, do not change any of the other settings and press ok. Make sure the correct com port is also If all your added cameras have the same control protocols then you can tick, then tick apply to all profiles.

Click next to bring you to the

#### Video options page.

Here you can set the specific bitrate, frame rate for the transmitted video stream.

Video bitrate		20000	bps				
Intra frame every	4	tps secon	d(e)				
internanio ovory	, ·	000011	ale)				
Resize Video	176	× 144	-	(source	= 176 x 1	44)	
🕅 Maintain	nput Aspect F	latio					
Algorithm B	linear	Ψ.					

#### **Overlay options**

Do you want date and time on the screen. If so tick encode text overlay. Time and date will be synced with the internet. If this is to be seen on all transmissions then tick apply to all. Then click next.

Add Profile Wizard			×
Overlay Options Set the text overlay options for this p	profile,		
Encode Text Overlay			
Text Date & Time			
Position TopLeft 💌			
	r	Apply these se	ettings to all profiles
	< Back	Next >	Cancel

#### <u>Output Page</u>

Output is pointing the encoder at the server to which it must send its streams.

Edit Profile Wizard	×
Output Set the output for this encoded stream.	1
✓ Server     Host 127.0.0.1     Stream Id vb-35-168-e1     SSL	Port 8000 🗮
Network Connection Any MAC Address - Adapter -	
🗖 File 📔	
Senal COM 17 🚍 Bau	Apply these settings to all profiles
	< Back Next > Cancel

#### Host

In this case the server is on the device you are currently programing therefore the host address will be the loop back adapter address 127.0.0.1.

#### Stream ID

Set the Stream ID to be the same as in the VSS Stream ID.

Save this encoder profile as a Wi-Fi encoder.

#### ADDING AN ENCODER IN WATCHDOG

Watch dog app, adding an encoder

Find the watch dog app, this can be found by pressing the start button;



Click on this and click tools and pause.

Right click on the box and click add to go to the add application window;

Executable	C Window	vs Service	
erviceName			
elect the executable you	wish the Watchdog to i	monitor.	
National command line are			
vpuonai commanu ine arg	uments		

Click on the box with three dots on and it will take you to the below;

My Computer VBOX168 \* Local Disk (C:) \* Program Files \* Vemotion \* Encoder \*

Click open and then this will save where your new encoder will be saved.

Optional command line arguments must then be typed in to name the encoder to match the encoder profile you have set up. In this case the encoder has been named as default.

"c:\default.vepf"

Press ok, come out of that add applications window, go to tools and press resume. All Encoder circles should be green if you have the authority to add multiple encoders.

This unit will not have a static IP address and needs to have one so that the Vemotion Player can be view the streams.

#### SETTING A STATIC IP ADDRESS

First you need to find out the IP address of the hardware encoder.

Press start and in the search programs and files type cmd to bring up the administrator. Type ipconfig enter and look for the wireless LAN IP address

Default Gateway	
Wireless LAN adapter Wireless Network Connection:	
Connection-specific DNS Suffix .: IPv4 Address	
C:\Windows\System32>	k

Open Network and Sharing Centre.

🔤 vbox168 ( 192.16	58.1.101	) - ser	vice mod	le										×
	<b>N</b> 6	a 🕕		; 💭 🏊							192.	168.1.10	1	
	14	Vem	otion Vid	eo Server		-			•			ncoder		
Network		File	Channel	Recording	is Help									
		0	Channel	Туре	Name		Recording File		Error		Target I	3		
		X	1	TW68XX	Channel 1	•					-			
		1	2	TW68XX	Channel 2	٢					( in the second s			
		~	3	TW68XX	Channel 3	.0								
Recycle Bin		~	4	TW68XX	Channel 4	0								
		~	5	Quad	Channel 5	9								
		1	6	RTSP	Channel 6	•			Timeout					
		×	253	Playback	Channel 253 V									
Skylight		×	254	Playback	Channel 254 I	<u></u>								
Sector Sector		×	255	Playback	Channel 255 S									
TeamViewer 9 Host	IO	Service	e: Connect	ted						.11				
VB3xViewer				Server: vr	na.vemotion.com:8	000		Disconnected	Not Sending		3			
Vemotion Encoder											Troublesho Open Netw	ot problems	aring Cen	iter 10 V

Click on Change adapter settings

letwork and Sharing Center		
Control Panel + Ne	work and Internet + Network and Sharing Center	✓ ☑ Search Control Panel
Control Panel Home	View your basic network information and set	up connections
Manage wireless networks	A A	🛛 🔫 🎱 See ful ma
<u>Change adapter settings</u> Change advanced Daring settings	VBOX 168 vemotion (This computer)	ENG 4 Internet
	View your active networks	Connect or disconne
	VemotionENG 4 Work network	Access type: No Internet access Connections: all Wireless Network Connection (vemotionENG)
	Change your networking settings	
	Set up a new connection or network Set up a wireless, broadband, dial-up, ad	hoc, or VPN connection; or set up a router or access point.
	Connect to a network Connect or reconnect to a wireless, wired	i, dial-up, or VPN network connection.
	Choose homegroup and sharing options	
	Access files and printers located on other	network computers, or change sharing settings.
See also	Troubleshoot problems	
HomeGroup	Diagnose and repair network problems, or	r get troubleshooting information.
Internet Options		
Windows Firewall		

This takes you to the Network Connections page where you should be able to see what is connected.



To check which port your camera is connected in, you can disconnect the camera and reconnect and check to see which disconnects and connects.

Right click on the icon and then left click on properties



#### Left click on Internet Protocol Version 4



Left click properties, click on use the following IP address but change the last octet to a different number.

ternet Protocol Version 4 (TCP/II	Pv4) Properties	?)
eneral		
You can get IP settings assigned aut this capability. Otherwise, you need for the appropriate IP settings.	omatically if your network support to ask your network administrator	s •
C Obtain an IP address automatic	ally	
Use the following IP address:-		-ř
IP address:	192 . 168 . 1 . 101	
Subnet mask:	255 . 255 . 255 . 0	
Default gateway:	192 . 168 . 1 . 1	
C Obtain DNS server address aut	omatically 🗟	
- 🖲 Use the following DNS server a	ddresses:	-
Preferred DNS server:	192 . 168 . 1 . 1	
Alternate DNS server:		
Validate settings upon exit	Advanced	
	OK Can	el

Also add in the default gateway as per the cmd ipconfig.

When you come to adding the server host address in the Vemotion player add in the same IP address as you have configured the wireless network to. 192.168.1.101

Do not connect via Wi-Fi via the Player if you are already connected via Wi-Fi to the wireless network connection for set up.

#### VIEWING THE VIDEO STREAM

Click on your viewing icon



Depending on the platform go into settings and look for the Wi-Fi signature of your encoder. Connect to the Wi-Fi.

#### **Edit Server Profiles**

When you come to adding the server host address in the Vemotion player add in the same IP address as you have configured the wireless network to. 192.168.1.101

#### 💔 Server Profiles

Select a server connection profile VIFI ~	
	Delete
Profile Name:	WIFI
Server Host:	192.168.1.101
Server Port:	4444 🚔
SSL:	Encryption Only
С	Encryption and Certificate Authentication
Usemame:	user1
Password:	••••
	ОК

Add in the Username and Password to match that set in the Vemotion Streaming Server.

Press Ok

This brings up a list of encoders video streams that you can view

If any more info is required please contact Vemotion - +44 (0) 8444 906 906 or info@vemotion.com

~ End of Document ~

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