# Infinova

# Security Management System Accessing CMS Channels ('Infinova 307X NVR') in Remote Client (22.11.28.01)

Note – this document can be considered as optional 'Part 2' of another document 'Security Management System - Remote Client (22.11.28.01)'.

Hence it is recommended to read 'Security Management System - Remote Client (22.11.28.01)' document and to perform the required configuration for 'Remote Client(s)' before following this document

Security Management System supports 'CMS Channels', where recording is processed in 'External Recorders' and NOT in the 'Security Management System Server software'.

The 'External Recorders' can be DVRs, NVRs, VMSs or any video sources which can record the data locally

'Security Management System' however manages the channels added to the 'External Recorders', and also makes them available in the 'Security Management System Client software'.

'CMS channels' are the channels for which 'Recording mode' is set to 'From Video Source'.

Recording settings - Cam963	×
Channel details Channel ID: VC_Cam963 Channel Description: Cam963 Video Source Type: Recording Drive: C:\	Video disabled
Recording mode	
Recording schedule settings Scheduled recording is disabled	
Record on alarm settings Record on alarm is disabled	

Separate document is available for configuration and use of 'Infinova 307X NVR' channels as CMS channels in the 'Security Management System'.



This document describes the configuration for accessing 'Infinova 307X NVR' channels, added as 'CMS channels' in the 'Security Management System Remote Client'.

Note 1 – This document is applicable if the project requirement or solution design includes following 2 components –

- (a) Remote clients, running on external network; and connecting to the 'Security Management System Server software' hosted on internal enterprise network.
- (b) 'Infinova 307X NVRs', which process the recording on local storage in the NVR, and one or more channels from these NVRs are added to the 'Security Management System Server software' as 'CMS channels'

If the project requirement or solution design does not include both 'remote clients' and 'Infinova 307X NVR' channels added to the 'Security Management System Server software' as 'CMS channels'; this document is not applicable and can be ignored

Note 2 – The configuration needed to expose the 'CMS channels' to the remote client, running on an external network; is from the network side. It involves 'port forwarding' configuration in the router.

The 'port forwarding' configuration is external configuration. It is specific to router used and the network design. The port forwarding configuration needs to be performed by the network team at the site.

The 'port forwarding' configuration is outside the scope of the 'Security Management System' software and the 'Security Management System' software does NOT process the 'port forwarding'. The 'Security Management System Remote Client' only uses the port forwarding information, as configured by the network team at the site, for connecting to the 'Security Management System Server software' and the 'CMS channels' added to the 'Security Management System Server software'.



## [A] Ports used by 'Infinova 307X NVRs'

- 1. Please connect to the 'Infinova 307X NVR' from web browser
- 2. Please go to the 'Settings' tab, and 'Network settings -> TCP/IP' page under it

Infinova	Previe	w Playback	Settings
Basic Setting	ТСР/ІР		
Network Setting	Network Mode	Independent IP	
> TCP/IP	Network Card	Eth1(Main Card)	
> DNS > DDNS	Default Router	Eth1(Main Card)	
> UPNP	DHCP Enable		
Advanced Setting	MAC Address	00 . 18 . 8A . 09 . 7A .	59
IPC Management	IP Address	192 . 168 . 1 . 183	
System Management	Subnet Mask	255 . 255 . 0 . 0	
System Info	Default Gateway	192 . 168 . 0 . 2	_
	TCP Port	8000 (1~65535	i)
	UDP Port	8003 (1~65535	i)
	HTTP Port	80 (1~65535	i)
	Preview Port	5000 (1~65535	i)
	Restore	Refresh	

Note – the web browser GUI may be different for different 'Infinova 307X NVR' models

- 3. Please manage and update following values -
  - (a) TCP Port
  - (b) UDP Port
  - (c) HTTP Port
  - (d) Preview Port
- 4. All these port number values should be unique across all 'Infinova 307X NVRs' in the target IP video surveillance solution.

There should be no duplication of port number value across all port types and across all NVRs

e.g. if the target IP video surveillance solution has 3 'Infinova 307X NVRs', the sample configuration can be as follows –

Sr.	NVR	TCP Port	UDP Port	HTTP Port	Preview
No.					Port
1	192.168.0.201	8000	8003	80	5000
2	192.168.0.202	9000	9003	9080	9500
3	192.168.0.203	10000	10003	10080	10500

- (a) The above table is only an example, actual values used at the site can be different.
- (b) Total 3 X 4 = 12 port numbers are used, and each one should be unique.

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 Please connect to each of the 'Infinova 307X NVRs' in the target IP video surveillance solution, from web browser; and set unique port numbers across all 'Infinova 307X NVRs' and all ports.

Note 1 – When 'HTTP Port' for any 'Infinova 307X NVR' is changed, for connecting to the NVR from web browser, please use URL – http://<NVR\_IP\_Address>:<HTTP\_Port\_Number> Where '<NVR\_IP\_Address>' is the IP address of the target 'Infinova 307X NVR', and '<HTTP\_Port\_Number>' is the 'HTTP Port' set for the target 'Infinova 307X NVR'.

Note 2 – When 'TCP Port' for any 'Infinova 307X NVR' is changed, it needs to be reflected in the 'Security Management System Server software too'.

If any channels from the target 'Infinova 307X NVR' are already added to "Security Management System Server software', each of these channels need to be edited

Channel Name:	Cam964
Channel ID:	: VC_ Cam964
Channel Description:	Cam964
Video Source Type:	Infinova NVR 307X V
IP address:	: 192 . 168 . 0 . 201
SDK Port number:	: 8000
User name:	admin
Password:	
Channel number:	: 1
Display stream 1	Display stream 2
Stream type: Sub stream	Select stream: Use different stream
	Stream type: Main stream
Recording stream	Motion detection and video analytics stream
Select stream: Use display stream 1	1 V Select stream: Use display stream 1 V
Stream type: Main stream	✓ Stream type: Main stream ✓
	🚽 🥥 🛛 🗞
	🕂 🕗

The 'SDK port number' specified in 'Edit video channel' (or 'Add video channel') should match the 'TCP Port' set for the target 'Infinova 307X NVR' from the web browser GUI

6. After configuring the ports for all 'Infinova 307X NVRs', please confirm that settings are OK -



- (a) Please connect to each of the 'Infinova 307X NVRs' from web browser, and from web browser GUI, confirm that live video is visible for each of the channels and playback video is visible for each of the channels
- (b) Please check and confirm that live video and playback video for each of the channels from each of the 'Infinova 307X NVRs' is visible from 'Security Management System Client software' (Local client)

#### [B] Port forwarding information

1. Please configure the router in the network, to expose the target 'IP address' and the related ports to external network. List the mapping table, as follows –

Sr. No.	NVR	Internal IP address	Internal port number	External IP address	External port number	
1	Infinova 307X NVR 1	<ip address="" i1=""></ip>	<tcp 1="" port=""></tcp>	<ip address="" e1=""></ip>	<tcp 1="" port=""></tcp>	
2	Infinova 307X NVR 1	<ip address="" i1=""></ip>	<udp 1="" port=""></udp>	<ip address="" e1=""></ip>	<udp 1="" port=""></udp>	
3	Infinova 307X NVR 1	<ip address="" i1=""></ip>	<http port<br="">1&gt;</http>	<ip address="" e1=""></ip>	<http port<br="">1&gt;</http>	
4	Infinova 307X NVR 1	<ip address="" i1=""></ip>	<preview Port 1&gt;</preview 	<ip address="" e1=""></ip>	<preview port<br="">1&gt;</preview>	
5	Infinova 307X NVR 2	<ip address="" i2=""></ip>	<tcp 2="" port=""></tcp>	<ip address="" e2=""></ip>	<tcp 2="" port=""></tcp>	
6	Infinova 307X NVR 2	<ip address="" i2=""></ip>	<udp 2="" port=""></udp>	<ip address="" e2=""></ip>	<udp 2="" port=""></udp>	
7	Infinova 307X NVR 2	<ip address="" i2=""></ip>	<http port<br="">2&gt;</http>	<ip address="" e2=""></ip>	<http port<br="">2&gt;</http>	
8	Infinova 307X NVR 2	<ip address="" i2=""></ip>	<preview Port 2&gt;</preview 	<ip address="" e2=""></ip>	<preview port<br="">2&gt;</preview>	
9	Infinova 307X NVR 3	<ip address="" i3=""></ip>	<tcp 3="" port=""></tcp>	<ip address="" e3=""></ip>	<tcp 3="" port=""></tcp>	
10	Infinova 307X NVR 3	<ip address="" i3=""></ip>	<udp 3="" port=""></udp>	<ip address="" e3=""></ip>	<udp 3="" port=""></udp>	
11	Infinova 307X NVR 3	<ip address="" i3=""></ip>	<http port<br="">3&gt;</http>	<ip address="" e3=""></ip>	<http port<br="">3&gt;</http>	
12	Infinova 307X NVR 3	<ip address="" i3=""></ip>	<preview Port 3&gt;</preview 	<ip address="" e3=""></ip>	<preview port<br="">3&gt;</preview>	
nn	n (Additional records for remaining 'Infinova 307X NVR's – 4 records per 'Infinova 307X NVR's – 4 records per 'Infinova 307X NVR')					

During port forwarding configuration on the router, please allow incoming as well as outgoing traffic and for both TCP and UDP, for all ports being configured for port forwarding.



- (a) The 'Internal IP address' ('<IP address I1>', '<IP address I2>', '<IP address I3>') are the IP addresses for the target 'Infinova 307X NVRs', as specified in the 'Security Management System Server software' ('Add video channel' or 'Edit video channel')
- (b) The 'Internal port number' and 'External port number' for each 'Infinova 307X NVR' should be exactly the same, for a record / port.
  - i. '<TCP Port n>' –
  - ii. '<UDP Port n>'
  - iii. '<HTTP Port n>'
  - iv. '<Preview Port n>'

These values should match the configuration processed in section [A] in this document.

(c) The 'External IP address' is as per 'port forwarding' configuration processed in the router by the networking team.

The 'External IP address' for each 'Infinova 307X NVR' may be different, or it maybe same for all 'Infinova 307X NVR'

Sr.	NVR	Internal IP	Internal	External IP	External
No.		address	port	address	port
			number		number
1	Infinova 307X NVR 1	192.168.0.201	8000	10.10.1.89	8000
2	Infinova 307X NVR 1	192.168.0.201	8003	10.10.1.89	8003
3	Infinova 307X NVR 1	192.168.0.201	80	10.10.1.89	80
4	Infinova 307X NVR 1	192.168.0.201	5000	10.10.1.89	5000
5	Infinova 307X NVR 2	192.168.0.202	9000	10.10.1.89	9000
6	Infinova 307X NVR 2	192.168.0.202	9003	10.10.1.89	9003
7	Infinova 307X NVR 2	192.168.0.202	9080	10.10.1.89	9080
8	Infinova 307X NVR 2	192.168.0.202	9500	10.10.1.89	9500
9	Infinova 307X NVR 3	192.168.0.203	10000	10.10.1.90	10000
10	Infinova 307X NVR 3	192.168.0.203	10003	10.10.1.90	10003
11	Infinova 307X NVR 3	192.168.0.203	10080	10.10.1.90	10080
12	Infinova 307X NVR 3	192.168.0.203	10500	10.10.1.90	10500

Following is the example table with example values -

Notes –

- (a) This table is only an example and actual values, will change depending on the network configuration at the deployment site
- Please make sure that the remote computer is able to access each of the 'Infinova 307X NVRs', through the port forwarding.
  Using the standard 'Ping' command to ping the router IP address, can be a good initial test. However, advance tools available with the network team need to be used to confirm the port forwarding configuration and access to all exposed ports through port forwarding.
- 3. As an additional check; from remote client computer, please connect to each of the 'Infinova 307X NVRs' from web browser; and from web browser GUI, confirm that live video is visible for each of the channels and playback video is visible for each of the channels.



The web browser URL to be used for connecting to 'Infinova 307X NVR' from web browser on the remote client computer, would be – http://<External\_IP\_Address>:<HTTP\_Port\_Number> Where '<External\_IP\_Address>' is the as per port forwarding configuration processed.

### [C] 'Security Management System' Server software

 In the 'Security Management System Server software', please navigate to the 'Communication -> Recorders port forwarding' page from the left side navigation menu

192.168.0.76	2	Communicati	ion → Recorders port forward	ling			
Head Office	2	If remote clients are expected to connect to this server software through port forwarding					
External videos	^	configuration, and if CMS channels are added to this server software; the remote client requires additional information. This additional information, related to 'port forwarding' can be specified on					
Device groups		this page	2.				
Status		If remote clients are not part of the solution, the information on this page is not required to be					
Reports and export		Note Th					
Communication		The 'Secu	irity Management System' so	oftware doe	s NOT process the 'port forwa	arding'. This pa	ige is
Network		only for c network	apturing the information rela team. The 'Security Manager	ated to 'port nent Systen	: forwarding' which is already n' uses this information for co	configured by nnecting to the	the e target
Security		recorders	5.				
Email settings		Recorder	list.			0	
Phone settings			Deserved and TD and deserved an	Frahlad	Estamol ID address and		
FTP settings		Sr. NO.	Recorder IP address or	Disabled	External IP address or d		1
Video streaming		-	192.100.0.201	Disabled			Edit
Restrictions							0
RSS feed settings							8==
External database		Recorder	r details:				
Relay outputs		Sr. No.	Recorder IP address or	Enabled	External IP address or d	Parameter r	~
Web Service		1	192.168.0.201	Disabled		SDK Port nu	<u>-</u>
Custom interface 1							
Recorders port forward	ing	1				, I	
Security devices	~					,	

- The 'Recorder list' will display one entry for each 'Infinova 307X NVR' device, for which at least one 'CMS channel' is added in the 'Security Management System Server software'. By default 'Port forwarding' will be 'Disabled' for all the entry.
- 3. Please select an entry and click on the 'Edit' button. This will pop up the 'Port Forwarding Configure IP Address' dialog box.

Port Forwarding Configure IP address	×
☑ Enable port forwarding	
Recorder IP address or domain name:	
192.168.0.201	
External IP address or domain name:	ו
10.10.1.89	

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Please select / enable 'Enable port forwarding' check-box.
 Specify 'External IP address or domain name' for the target 'Recorder IP address or domain name'

The 'Recorder IP address or domain name' is the 'Internal IP address' from the mapping table created as per point [B].1 in this document

The 'External IP address or domain name' is the 'External IP address' associated with the target 'Recorder IP address or domain name' ('Internal IP address') from the mapping table created as per point [B].1 in this document

- 5. Click on the 'OK' button to save the configuration and to close the 'Port Forwarding Configure IP Address' dialog box.
- The steps [C].3 to [C].5 configure 'External IP address or domain name' for single 'Infinova 307X NVR'. Same steps need to follow for all 'Infinova 307X NVR' displayed in the 'Recorder list'.

It is important to configure 'External IP address or domain name' for every entry in the 'Recorder list'

- In the 'Security Management System Server software', please navigate to the 'Communication -> Recorders port forwarding' page; selecting any entry under 'Recorder list' updates 'Recorder details' list.
- 8. For 'Infinova 307X NVR' entry under 'Recorder list', only one row will be displayed under 'Recorder details' list.

192.168.0.76	Communication → Recorders port forwarding			
Head Office	If remote clients are expected to connect to this server software through port forwarding			
External videos	configuration, and if CMS channels are added to this server software; the remote client requires additional information. This additional information, related to 'port forwarding' can be specified on			
Device groups	this page.			
Status	If remote clients are not part of the solution, the information on this page is not required to be			
Reports and export	Note: The part for an instant of the form the sed of the barrow of the the set of the set			
Communication	The 'Security Management System' software does NOT process the 'port forwarding'. This page is			
Network	only for capturing the information related to 'port forwarding' which is already configured by the network team. The 'Security Management System' uses this information for connecting to the target			
Security	recorders.			
Email settings	Recorder liet:			
Phone settings				
FTP settings	Sr. No. Recorder IP address or Enabled External IP address or d			
Video streaming	1 192.106.0.201 Enabled 10.10.1.89			
Restrictions	0			
RSS feed settings				
External database	Recorder details:			
Relay outputs	Enabled External IP address or d Parameter name Internal port number			
Web Service	Enabled   10.10.1.89   SDK Port number   8000			
Custom interface 1	Edit d			
Recorders port forwarding				
Security devices				

9. Please select the entry under 'Recorder details' and click on the 'Edit' button next to it. This will pop up the 'Port Forwarding Configure Ports' dialog box



Port Forwarding Configure Ports	×
Recorder IP address or domain name: 192.168.0.201	
External IP address or domain name: 10.10.1.89	
Internal Port (SDK Port number):	8000
External Port (SDK Port number):	8000

- 10. Specify the 'External Port (SDK port number)' should be exactly same as 'Internal Port (SDK Port number).
- 11. Click on the 'OK' button to save the configuration and to close the 'Port Forwarding Configure Ports' dialog box.
- 12. The steps [C].9 to [C].11 configure 'External Port (SDK port number)' for single 'Infinova 307X NVR'. Same steps need to follow for all 'Infinova 307X NVR' displayed in the 'Recorder list'. It is important to configure 'External Port (SDK port number)' for every entry in the 'Recorder list'

#### [D] 'Security Management System' Remote Client

1. No special configuration is required in the 'Security Management System remote client' software.

#### Notes –

- (a) It is very important to have sufficient and consistent network throughput available between each of the 'Infinova 307X NVRs' and the remote client.
  - i. In the direction from remote client to 'Infinova 307X NVR' minimal network throughput 32 kbps is required
  - In the direction from 'Infinova 307X NVR' to remote client higher network throughput is required. Exact value can be calculated based on multiple parameters including live video stream bitrate, maximum simultaneous number of live videos viewed in remote client, recorded video bitrate, maximum simultaneous number of recorded videos viewed in remote client etc.



(b) If sufficient network throughput is not available, the videos from the 'Infinova 307X NVR' may not be displayed properly in the 'Security Management System Remote Client'