

Videstra

Get the Most From
Your Micro Local Cameras



Videstra N7k Automation Interface

AUTOMATION INTERFACE VIA GVG NATIVE PROTOCOL V1.0.0

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Contents

Overview	1
The Videstra N7k Manager	3
Adding a Source	3
Enabling the N7k Interface	5
Using the Videstra N7k Automation Interface.....	6
Locked Panels.....	6
Route Conflicts	6
Printing.....	6
Communication with the Videstra N7k Router Interface	7
Take Only System.....	7
Commands Supported	7
Level Specification.....	8

Overview

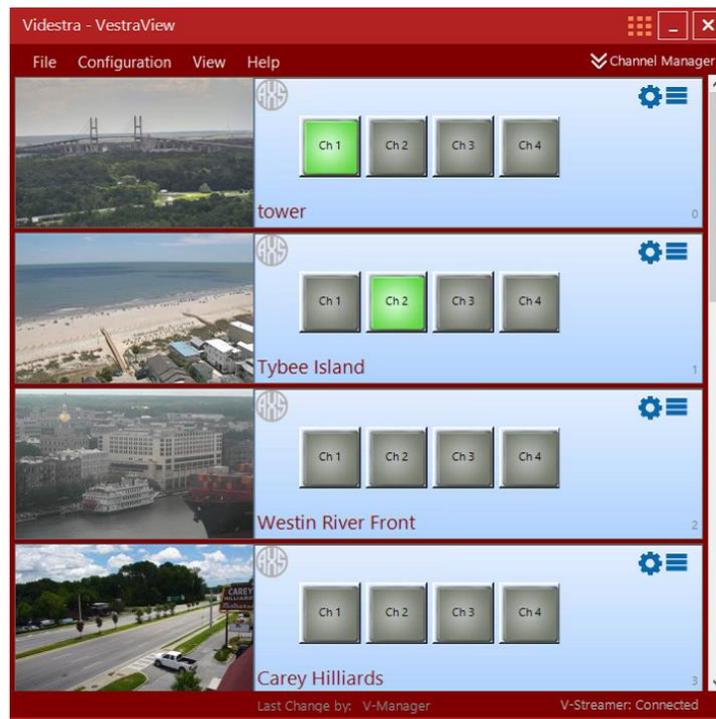
The Videstra system uses one or two h.264/h.265 decoders (The V-Streamers) – each has 4 video outputs.



Videstra V-Streamer™

The N7k supports up to 8 V-Streamer *Destinations*.

The Videstra system *essentially* routes h.264 cameras from their IP Addresses to HD-SDI video outputs on the V-Streamer. Normally this is done from the VestraView UI that looks like this:



VestraView Client

What you see above is the VestraView UI with camera *sources* on the left (the still image updates every 60 seconds) and the available V-Streamer *destinations* on the right. If a customer has two V-Streamers (many do) then there are 8 destinations available.

The N7k router interface lets you connect any source (h.264 camera) to any destination (V-Streamer output) via automation or a physical router head that talks GVG 7000 Native Protocol. A software router head is available from Videstra upon request.

In addition, each source (camera) can support preset positions. Using the **Videstra Router Manager™** you can create *virtual* sources (both names and indexes) that are a combination of a camera and a preset. In the example image above the “Tower” camera may have 5 presets called

1. Downtown
2. River Street
3. Rousakis Plaza
4. Hutchison Island
5. Talmadge Bridge

With the Videstra Router Manager you would create sources like this:

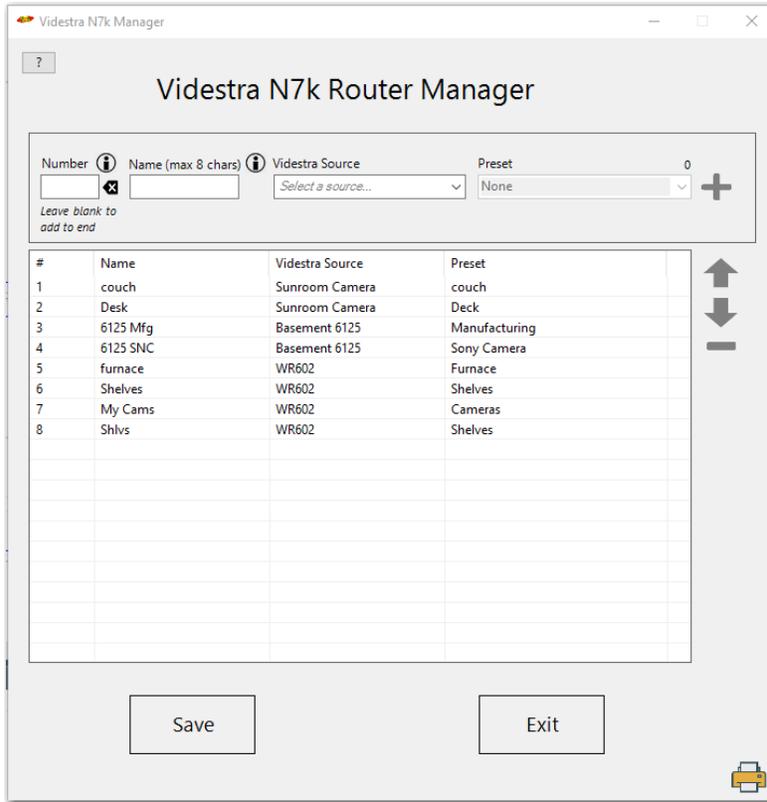
Source	Name	Camera	Preset
1	TowDntn	Tower	Downtown
2	RiverSt	Tower	River Street
3	Rousakis	Tower	Rousakas Plaza
4	Huchisin	Tower	Hutchinson Islang
5	Talmdg	Tower	Talmadge Bridge
6	Tower	Tower	[none]

With the Videstra Router Manager you can add as many as required.

‘None’ is always an available preset for all cameras. This is the default and simply means no GOTO PRESET command will be sent to the camera and the source will be whatever the camera is currently showing.

If a camera has no presets, or does not support presets, then ‘None’ will be the only option.

The Videstra N7k Manager



The Videstra N7k Manager is how you set up your sources for the Videstra Automation Interface. This application runs only on the V-Manager computer because it requires information that is available on that computer (all source definitions for your system).

The N7k Manager lets you enter a custom name for each source 'route' you create. The name may be up to 8 characters only (this is what the GVG Native Protocol supports). Indexes are automatically assigned and are always ordered from top to bottom.



You may select a defined source and move it up or down in the list. As you move it the index for that source will be reassigned – but the name will travel with it.



You may delete any defined source by clicking on the minus sign.

Adding a Source

Number Name (max 8 chars) Videstra Source Preset +

Leave blank to add to end

To add a source, you may select any camera (Videstra Source) that appears in the drop-down list where it says *Select a source...*

Once a source is selected it is automatically queried for any available presets. Cameras without any defined presets, or fixed cameras will not populate the Preset drop-down list and only 'None' will be available.

Once a source and (optionally) a preset has been selected you may enter an up-to-8-character name for the source. If supported by the automation system this name will be displayed in the automation systems interface. All names must be unique. Attempts to enter a duplicate name will receive an error message and you will be given an opportunity to change it.

You may enter an index number and it will insert it into the existing list (if any), pushing the rest down (and reindexing them). If you leave the number blank it will simply add the new source to the end of the list and get the next available index number.



Press the plus sign to add the item to the list.

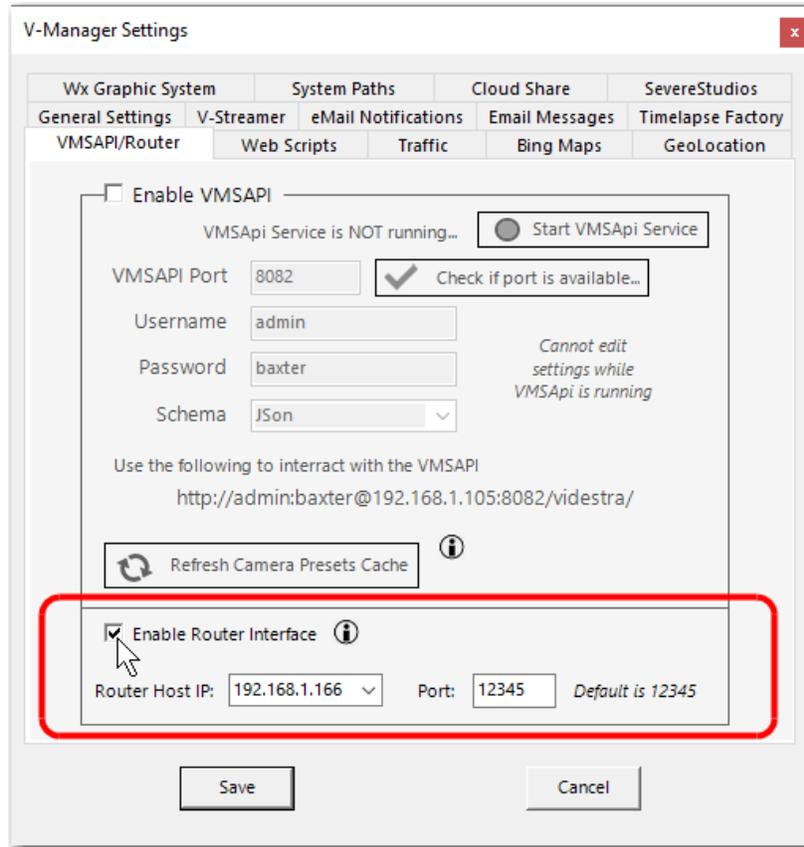
When you are done creating your source list with the N7k Manager, click on save and the list will be saved to your system and you may exit the application.

At any time, you may restart the N7k Manager and edit, add or delete router sources.

Note: It is recommended that any new additions always be added to the *end* of the list. New items added above the end will force a re-index of the list (from the inserted item). This will affect any pre-programmed automation actions on your automation system.

Enabling the N7k Interface

If your system has been licensed to use the Videstra N7k interface (contact Videstra support at 608.999.9003 if it has not) you may enable it on the V-Manager Server Application under the menu **File** → **Settings** → **VMSAPI/Router** tab.



The default IP Address is the main IP of the V-Manager. You may install a secondary NIC (Must be a USB Dongle NIC) and use that IP Address. Any secondary IP available on the machine will automatically appear in this drop-down list. The port is normally 12345 as specified in the GVG Native Protocol documentation. It may be changed in the rare case of a port conflict.

If you turn this option on you will need to restart the V-Manager server application.

Using the Videstra N7k Automation Interface

Use of the interface will depend upon your automation system. Check with your automation system vendor on how to set up the interface from their perspective. You will be setting it up as if it were a simple router interface that uses the GVG (Grass Valley) Native 7000 protocol.

Note: When sending routes to the Videstra N7k Router Interface bear in mind that it takes several seconds for the V-Streamer to begin decoding the h.264 stream from the camera. Also – if the camera needs to move to a newly commanded preset that too will take a few seconds (it’s pretty rapid though). *All routes through the Videstra N7k interface should be made well in advance of needing the result on-air.*

Locked Panels



If a source panel on the Videstra system has been locked by a user to protect its channel assignment and/or camera position – N7k commands to that channel will be ignored. There is no method to provide feedback to the automation system that a channel has been locked other than to replay to the route request with a CHANNEL_PROTECTED message. It is up to the automation system to reflect this message to the users.

Route Conflicts



Routes can conflict with each other and care should be taken not to attempt to use conflicting routes. A conflicting route is when two routes from the same camera are sent to different V-Streamer channels, but one of the routes uses a different preset. If conflicting routes are sent to the system, the last one send will “win.” While it may seem obvious that one camera cannot be pointing in two directions – in the throes of a live production, unexpected conflicts can occur. The best way to avoid this is to be aware of your router sources and which cameras they each represent.

Printing

You can print a handy list of the currently defined routes by clicking on the printer icon in the lower right-hand corner of the application.

Index	Router Name	Source Name	Preset
0	couch	Sunroom Camera	couch
1	Desk	Sunroom Camera	Desk
2	6125 Mtg	Basement 6125	Manufacturing
3	6125 SNC	Basement 6125	Sony Camera
4	Furniture	WR802	Furniture
5	Shelves	WR802	Shelves
6	Hy Cams	WR802	Camera
7	Shks	WR802	Shelves

The printout shows the names, cameras, and presets for each route.

Communication with the Videstra N7k Router Interface

Connection to the Videstra N7k Router is via a simple TCP/IP socket on port 12345 (this is the default port used by all GVG™ 7000 routers for IP communications). The port can be changed in the rare case of a port conflict.

Take Only System

The Videstra N7k Router is designed to react to changes in routes (Source to Destination) only. Although an external system *can* ask for current route status (what sources are assigned to various destinations) the state of any destinations will be based entirely on the last route request sent. Initial status may be entirely bogus. This is because routes inside of the Videstra N7k are all considered virtual and can depend on the last *preset position any given camera has been set to*. Since cameras do not provide information about their current preset position – virtual routes cannot be conclusively established. In short – an automation system cannot rely on obtaining accurate destinate states unless that destination status was just set by the automation system. Because of this the Videstra Router interface should be considered a Take Only system.

Commands Supported

N7k only supports the following commands from the GVG Native 7000 Protocol:

Native Cmd	Description/Purpose
AS	Assign a machine (router input) to control by a specified destination (since we ignore levels, this is the same as a Ti command to Videstra)
BK (N)	Returns the name of the interface
BK (R)	Returns the version of the interface
Qd/QD	Query destination status
QN (S)	Query source names
QN (D)	Query destination names (immutable – always returns 'dst 1' through 'dst 8')
QN (V)	Query salvo names – <i>NOT IMPLEMENTED (Salvo not supported by Videstra)</i>
QN (IS)	Query source names with indices (0 based)
QN (ID)	Query source names with indices (0 based)
QI/Qi	Query sources assigned to destinations by specific destination and level index
QT	Query system date/time
Ti/Ti	Take source to destination by Index (0 based)
TD/Td	Take source to destination by name

Commands not on this list will return either an ASCII representation of an 0x05 (not implemented) or 0x80 (unknown command) error.

Commands specified by the GVG Native Protocol that expect no response will receive an ASCII representation of an 0x00 (no error).

Destination names/indexes are immutable and always as follows

Index	Name
0	dst 0
1	dst 1
2	dst 2
3	dst 3
4	dst 4
5	dst 5
6	dst 6
7	dst 7

Note: When doing queries of names and sources the Videstra N7k will return each name as a separate sequence (marked appropriately). Each name will have the continuation flag set to 1, and the final name will have the continuation flag set to zero – as per the GVG Native Protocol documentation.

Level Specification

The Videstra implementation of levels within a routing system are ignored. Levels mean nothing to the Videstra N7k interface. Any level designation from commands that support levels will be ignored. All responses from commands expecting level designations will receive an 'all levels' specification (ASCII representation of 0x00 padded to 4 chars '0000' in the response).

Detailed documentation on the GVG Native 7000 protocol can be obtained through Grass Valley or Videstra upon request.